

## Fitchburg Technology Campus – Phase II

### Follow-up information: Threatened, Endangered, and Special Concern Species; Cultural Resources; Specimen and Heritage Trees

In the Spring of 2007, the City of Fitchburg commenced the planning process for the McGaw Park Neighborhood. The Fitchburg Technology Campus – Phase II is located within the study area of the McGaw Park Neighborhood. The following is a summary and supporting documentation for Fitchburg Technology Campus – Phase II

#### Endangered Species

- Report: Page 1-3; Page 3-4; Page 3-5
- In report labeled as “Threatened, Endangered, and Special Concern Species”
- No obstacles to development identified

#### Archaeological/Historical Study

- Report: Page 1-4; Page 3-6
- In report labeled as “Cultural Resources”
- No obstacles to development identified

#### Heritage and Specimen Tree Assessment

- Report: Page 1-6; Page 7-2
- Definition:
  - Heritage (Centennial) Oaks
    - Oak trees species that are native to southern Wisconsin including red (*Quercus rubra*), black (*Quercus velutina*), and northern pin (*Quercus ellipsoidalis*) with a dbh of at least 42 inches diameter (11-ft circumference) and white (*Quercus alba*), bur (*Quercus macrocarpa*), chinkapin (*Quercus muehlenbergii*), and swamp white (*Quercus bicolor*), or naturally occurring hybrids with a dbh of at least 38 inches (10-ft circumference) or otherwise determined to be at least 200 years old.
  - Specimen Tree
    - Any living tree that displays superior quality and characteristics when compared trees of the same species or other trees in the vicinity of the woodlot. For the purpose of this assessment a specimen tree must be dominant or codominant in the canopy, have a DBH of greater than or equal to 15 inches, and display good health and form.

## Chapter 1: Executive Summary

In the Spring of 2007, the City of Fitchburg commenced the planning process for the McGaw Park Neighborhood. As required, by Appendix H of the 1995 General Land Use Plan, the McGaw Park Neighborhood planning initiative provides land use, transportation, infrastructure, and environmental guidelines for the extension of the urban service boundary. The McGaw Park Neighborhood Plan was developed as an amendment to the City's Comprehensive Plan and as such is fully compliant with the Comprehensive Plan. It was completed as part of the comprehensive planning process including guidance from a Steering Committee, elected officials, the public, staff, and consultants.

The McGaw Park Neighborhood planning process began with an understanding of the environmental resources. Once environmental resources were identified and the boundaries of the environmentally sensitive lands were defined, land use, transportation, infrastructure, and environmental goals and policies were formulated in order to conserve and respect the sites natural resources. The goals and policies of the future development of the study area reflect a desire to preserve the existing natural resources and plan development around the most environmentally sensitive areas.

## Chapter 2: Introduction

With its location in central Fitchburg, and along the southern edge of urban Fitchburg, the McGaw Park Neighborhood is situated in a logical location for urban service expansion. Furthermore, due to its location directly adjacent to the Fitchburg Technology Campus and southwest of the planned U.S. Highway 14 interchange, the McGaw Park Neighborhood is already experiencing development pressure.



**Figure I.1: McGaw Park Neighborhood**

The McGaw Park Neighborhood Study Area is located in the 12<sup>th</sup> ward of the City of Fitchburg and is approximately bounded by:

- South: Utility easement north of Irish Lane
- North: Lacy Road
- East: South Branch of Swan Creek
- West: Fish Hatchery Road

The McGaw Park Neighborhood Study Area encompasses approximately 712 acres or 1.1 sq/miles and is over 80% existing farmland and/or environmentally sensitive area. The Study Area is bisected north/south by Syene Road; however it is not bisected by an east/west road. A US-Highway 14 interchange is planned to connect to Lacy Road northeast of the existing Syene Road / Lacy Road intersection. In addition, a dormant freight rail line runs along the entire length of Syene Road within the Study Area.

## **LEED-ND**

The McGaw Park Neighborhood seeks to become a benchmark example of a sustainable neighborhood, aiming to be a participant in the U.S. Green Building Council's LEED-Neighborhood Development (LEED-ND) program. The LEED-ND Rating System integrates principles of "green", mixed-used, transit-oriented development by utilizing a point system. Seeking LEED-ND for the McGaw Park Neighborhood was a priority of the City and the McGaw Park Neighborhood Steering Committee. The Plan is not being driven by seeking LEED-ND status; rather the established goals and objectives of the Plan lend itself to seeking certification under LEED-ND.

LEED-ND emphasizes the creation of compact, walkable, vibrant, mixed-use neighborhoods with good connections to nearby communities and encourages compact development patterns and the selection of sites that are within or adjacent to existing development in order to minimize habitat fragmentation and preserve areas for recreation. In addition, LEED-ND encourages convenient and efficient transportation options such as buses, trains, car pools, bicycle lanes and sidewalks. LEED-ND is currently in the pilot program nationally. In order to obtain LEED-ND certification, a neighborhood must meet a number of points based upon a rating system. Points are given based on "smart location and linkage," "neighborhood pattern and design," "green construction & technology," and "innovation and design process."

### **Chapter 3: Site Characterization**

Agricultural use and parklands, accounting for over 91% of total acreage, highlight the land use composition for the McGaw Park Neighborhood. The neighborhood includes its namesake 49-acre McGaw Park, which includes both active and passive recreation. The remaining 9% is a mix of agricultural processing (Hartung corn processing plant), rural residential (subdivision of Tarpleywick Hills), and a scattering of large lot residential uses.

**Table I.1: Existing Land Uses**

Land Use	sq ft	acres	% of total
Agricultural	24,711,723.3	567.3	83.3%
Park & Open Space	2,373,535.8	54.5	8.0%
Agricultural Processing	1,288,545.5	29.6	4.3%
Rural Residential	1,231,484.8	28.3	4.2%
Residential	68,832.8	1.6	0.2%
Study Area(TOTAL)	29,674,122.1	681.2	100.0%

### **Threatened, Endangered and Special Concern Species**

Endangered and threatened species are provided protection under the Wisconsin Endangered Species Law (29.604 State Stats.) and their presence can be a significant constraint to development. A preliminary screening was completed in coordination with WDNR to determine rare species most likely to occur within the vicinity of the study area. Subsequent field surveys and habitat assessments were completed targeted towards those rare species most likely to occur. **Based on the evaluations no rare species were identified and habitat suitable to support such rare species was very limited. Therefore, rare species are not a constraint to the McGaw Park Neighborhood Plan.**

## **Cultural Resources**

Historic structures, archaeological sites, and cemeteries/burial sites may be subject to local, state or federal laws and regulations, such as Section 106 of the National Historic Preservation Act related to historic properties and archaeological sites and the Wis. Stat 157.70 Disposition of Human Remains associated with cemetery/burial sites. A cultural resource screening was completed for the study area and immediately adjacent or contiguous properties utilizing the Wisconsin Historic Preservation Database (WHPD) maintained by the Wisconsin Historic Society. Local cultural resources were identified through coordination with the City of Fitchburg. No cultural resources were identified within the study area through the WHPD. One City of Fitchburg designated local landmark, the Rueden Farmhouse is located along Lacy Road within the study area (Figure 1.2).

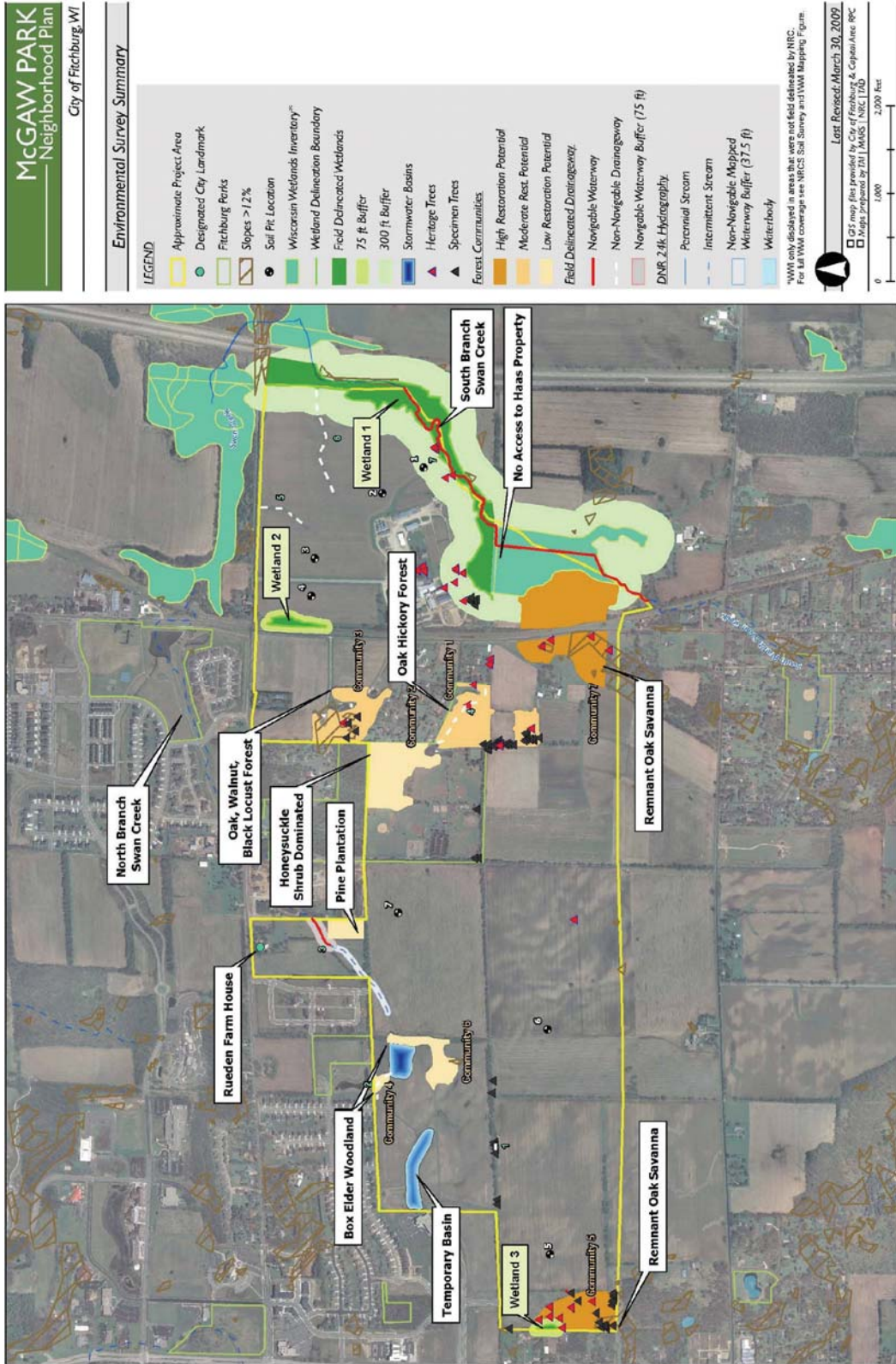


Figure 1.2: Field Collected Data

### **Wetlands**

Wetland determinations within the study area were completed in the field. All wetland boundaries were delineated and mapped (Figure 1.2). Three wetlands were identified (W-1 – W-3). W-1 lies adjacent to the S. Branch of Swan Creek and contains relatively high wetland functional values due primarily to wildlife habitat, water quality protection, and stormwater attenuation functions. As such, there is a 300 foot wetland buffer from the delineated boundary of W-1 identified. W-2 is a highly degraded wetland comprised of agricultural land; W-3 is also highly degraded and comprised mostly of open water. Both wetlands contain limited functional values primarily due to the limited wildlife habitat and isolation from surface water streams. A 75-foot buffer is designated around W-2 and W-3.

### **Waterways**

All waterways and drainage features were field surveyed and mapped throughout the study area (Figure 1.2). Subsequently, the WDNR completed navigability determinations of each drainage feature. Of the seven drainage features identified within the study area, two were determined to be navigable, the North and South Branches of Swan Creek. Land disturbing activities within close proximity to these waterways may be subject to review and authorization by the WDNR.

In addition to regulatory evaluations of waterways, ecological assessments were completed both within the study area (South Branch of Swan Creek) and outside but down stream of the study area (Swan Creek and Murphy's Creek). Ecological assessments consisted of in-stream habitat assessments, fish surveys, and aquatic macro-invertebrate surveys. The objective of the evaluation was to document baseline conditions; evaluate aquatic habitat; and develop a better understanding of species composition and diversity within these waterways. Potential impacts or enhancements of the waterways following implementation of the neighborhood plan can be measured and compared to these baseline conditions in the future.

### **Natural Communities**

The study area is primary active agricultural land. However, there are several moderately sized woodlands scattered within the study area (Figure 1.2). Each of these communities were field evaluated to determine floristic composition and diversity and wildlife habitat value. Generally, the woodlands are dominated by moderately sized oak trees with varying degrees of disturbance. Two remnant oak savannas were identified as higher quality woodlands with excellent enhancement potential, as well as a mature oak/hickory forest. Moderate quality woodlands identified include younger growth oak/hickory forests, with fairly heavy infestations of non-native invasive species. Heavily degraded woodlands include box elder and honeysuckle dominated woodlots.

### **Heritage and Specimen Tree Assessment**

“Heritage Oaks” and “Specimen Trees” were investigated as defined by the City of Fitchburg's Parks, Recreation & Forestry Department, (described below). Thirty-three Heritage Oaks and 56

Specimen Trees were identified and surveyed in the study area and are illustrated on Figure 1.2.

### **Soil Evaluations**

A preliminary site soil evaluation was conducted throughout the study area within select locations (Figure 1.2). The primary objective was to assess the range of soil types across the site in order to evaluate stormwater infiltration suitability. The soils in the study area generally consist of loess underlain by several meters of gravelly sandy loam till deposited by the Green Bay Lobe during the last part of the Wisconsin Glaciation. The soils that have formed from these glacial deposits are typically well-drained and fertile. In the study area, these glacial sediments were deposited over sandstone bedrock, which is typically at relatively substantial depths across the site (greater than 10 feet). As a result, the soils across the site are highly suitable for natural infiltration of stormwater with some exceptions. Somewhat poorly and poorly drained soils, mostly limited to the wetlands and wetland margins are much less permeable and contain seasonally high groundwater tables making these areas less suitable for natural infiltration. Additionally, some select areas of the site contain shallow bedrock, also limiting natural infiltration.

## **Chapter 4. Plan Goals and Policies**

### **Neighborhood Plan Vision**

Develop an urban, green, sustainable, transit-oriented, mixed use, and economically vibrant neighborhood that offers a variety of land uses to serve everyday living needs, as well as a housing stock to serve all levels of age and income, which will not affect the existing on-site natural resources.

Through a series of Steering Committee meetings and input from the public through a Neighborhood Summit, the following goals were defined to guide the plan:

#### **Environmental goals:**

1. Protect and rehabilitate the natural environment
2. Provide public access to unique natural areas.
3. Design the neighborhood to compliment environmental protection.

#### **Agricultural Resource Goals:**

1. To protect and maintain agriculture as a significant resource within Fitchburg.
2. Through orderly planning of McGaw Park, preserve agricultural land beyond the area as a resource for the use and benefit of current and future generations.



**Economic Development Goals:**

1. Encourage economic development opportunities appropriate to the resources, character, and service levels in the City.
2. Provide that retail and service areas are adequately sized and appropriately placed within neighborhoods and the community.
3. Recognize and support the changing needs and preserve agricultural based businesses as an economic opportunity.
4. Preserve and enhance resources when developing economic opportunities.

**Community Character (Cultural):**

1. Promote and preserve the City's cultural resource base.
2. Actively seek to strengthen strong cultural and social history and community identity.

**Land Use Goals:**

1. Preserve and enhance the natural and agricultural resources and features of the city.
2. Develop a compact urban community that is visually and functionally distinct from its rural and agricultural community.

**Housing Goals:**

1. To provide for balanced residential growth in the City with a variety of housing types, to promote decent housing and suitable living environment for all residents, regardless of age, income or family size, and to encourage an adequate supply of affordable housing in each new urban neighborhood.
2. Promote the efficient use of land for housing.

**Transportation Goals:**

1. Promote development in areas that encourages options to alternative transit modes.
2. Promote transit-friendly design of healthy neighborhoods with walkable, short blocks.
3. Design complete streets that promote pedestrian and bicycle movement as well as cars.
4. Carefully plan additional road capacity.
5. Consider extensions of transit including bus and rail/bus rapid transit to make neighborhood transit accessible.
6. Minimize impact on existing roadways and infrastructure by planning for multiple modes of transportation.

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**Chapter 5. Systems Analysis: Sanitary, Water and Stormwater****Streams**

The McGaw Park Neighborhood (MPN) is located near the headwaters of three streams: Nine Springs Creek, Swan Creek, and Murphy's Creek. Nine Springs Creek is located north of the Neighborhood, near the southern edge of Madison's developed urban area. This watershed is primarily to the north of the project area. This stream is therefore unlikely to be significantly affected by runoff from the study area. Swan Creek originates in the study area and flows eastward through the Waubesa Wetlands to Lake Waubesa. The vast majority of the MPN is located in the Swan Creek surface watershed. Murphy's Creek is located approximately 1.5 miles south of the study area, and the MPN is entirely outside the Murphy's Creek surface watershed.

**Wetlands**

Two of the wetlands described above (W-1 and W-2) appear to be seasonally saturated or inundated, indicating that groundwater inflow to them is significant during part of the year. Priorities for water management are to maintain groundwater supply to the wetlands and to minimize changes in runoff volume and frequency. Wetland W-3, near the western boundary of the MPN, appears to be permanently inundated due to surface runoff. Minimizing changes in runoff volume to this closed depression wetland will be a primary management objective. The management implications are that (1) baseflow in Swan Creek could be affected by land use change in the MPN, (2) baseflow of Swan Creek, Murphy's Creek and local springs could be affected by land use changes far away from the MPN, and (3) these features could be affected by changes in groundwater pumping throughout the region.

**Floodplains**

The regulatory floodplain boundaries were updated by the Federal Emergency Management Agency (FEMA) in 2008. The new Flood Insurance Rate Maps (FIRMs) were adopted into City of Fitchburg zoning codes in 2008 and took effect on January 2, 2009. The FIRM shows floodplains only in the northeastern corner of the McGaw Park Neighborhood Plan area along the South Branch of Swan Creek.

**Steep Slopes**

Small areas with slopes steeper than 12% are present in three parts of the study area: the southwest corner, the southeast corner immediately west of Syene Road, and adjacent to the eastern boundary of McGaw Park. These slopes are all wooded and designated as environmentally sensitive areas with no development in the growth model.

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## **Woodlands**

Most woodlands in the MPN have been included as environmentally sensitive areas with no development in the growth model. Maintaining natural vegetation cover in these forest areas complements the use of engineered facilities to maintain groundwater recharge and reduce runoff volume.

### **Chapter 6: Systems Analysis – Other Infrastructure**

The McGaw Neighborhood is divided into the Madison and Oregon School Districts. Currently, all Fitchburg students are bused to existing schools in the two districts. Area 5 in the McGaw Park Growth Model is shown as a 10 acre Institutional Use, intended as a new school. Both school districts have expressed interest in building a new school in Fitchburg or a nearby area.

A total of 1,903 residential units are planned for the McGaw Neighborhood. Of these units, 301 are within the current boundaries of the Madison School District, and 1,602 are within Oregon School District. A new school located in McGaw Park would serve not only the immediate neighborhood, but surrounding areas within Fitchburg. Development in the McGaw Park Neighborhood, plus other planned neighborhoods in Fitchburg, creates the demand for a new neighborhood school in the City.

The area is well served by telecommunications carriers, including Cable, DSL, and close proximity to fiber available in the Fitchburg Technology Campus. The proximity to Fitchburg Technology Campus and Fitchburg Center, make the area a desirable location for employers and residents who require high speed and secure broadband connections. The City should ensure that the construction of Nobel Drive includes the laying of a fiber connection from Fish Hatchery to the TOD and planned Business Park east of Syene Road.

### **Chapter 7. Environmental, Open Space and Recreation Plan**

## **Wetland Restoration and Enhancement**

Wetland I along the South Branch of Swan Creek has the greatest potential for wetland restoration (Figure 1.2). In order to protect the wetland and the quality of the South Branch of Swan Creek, stormwater detention and treatment needs to be engineered with the following in mind. The creek, with its relatively cool water characteristics, should be protected from the thermal impacts of stormwater inputs. Stormwater outfalls which concentrate flows in one location could contribute to scouring within the channel during large rain events. Stormwater practices that may help meet this objective include stormwater infiltration, which could reduce the volume of stormwater inputs into the creek, and which may help maintain groundwater baseflow to the wetland and creek. Distributed stormwater outfalls into the wetland and creek may reduce scouring flows.

### **Woodland and Savanna Restoration and Enhancement**

The identified remnant oak savannas have excellent prospects for savanna restoration (Figure 1.2). The eastern oak savanna (Community 7) is overgrown with invasive trees and shrubs, including the invasive black locust, common buckthorn, and multiflora rose. While the western oak savanna (Community 5) has a more open canopy, and less shrub cover but contains an herbaceous layer dominated by non-native species. Restoration of these areas could be accomplished by preserving the large oak trees, removing non-native, invasive species, and reestablishing a native savanna prairie understory.

### **Open Space and Recreation**

The City of Fitchburg requires a park and open space dedication of 2,900 square feet per new residential unit. Based on this factor, 126.7 acres of park and open space is required. This may be a combination of both on-site open space or public plazas, as well as public parks being planned both within the Neighborhood (such as the expansion of McGaw Park), and beyond (such as the planned Moraine Edge Park just south of the Neighborhood). Based on the Plan, 87 acres is set aside as parks, which includes the existing McGaw Park and Johnson Park (49-acres), a 32-acre expansion to McGaw Park, and a new 6-acre park south of Nobel Drive. Therefore, 38 acres of new Park and Open Space are specifically shown as land uses within the Plan. The remaining 88.7 acre requirement can be fulfilled with additional neighborhood parks and other public spaces likely to be required within the neighborhood, parks outside the neighborhood boundary, as well as Fee-in-lieu-of Parkland Dedication provision. In addition to this open space, 100 acres of Environmentally Sensitive land is not buildable, which includes wetlands, environmental corridors, and areas with large concentrations of heritage and specimen trees. The planned Moraine Edge Park would be 174 acres, just beyond the neighborhood boundary to the south. Specific implementation recommendations regarding Parks are included on page 4-7.

## **Chapter 8. Land Use Plan**

Following the goals of the Plan, public participation, input from the Common Council and Plan Commission, the Steering Committee developed consensus for the Growth Model that guides the Land Use Plan. Over twelve conceptual growth models were developed prior to arriving at the Growth Model. The Growth Model was developed to protect and enhance the natural environment of the area prior to planning for development and transportation enhancements.

The land use plan divides the neighborhood into three distinct sectors, 1) a higher density, transit-oriented development node to the east, 2) a mixed-use and business park node to the west, 3) and a lower-density single-family residential and institutional use sector between the east and west nodes. Figure 1.3 shows the Growth Model that guides the Land Use Plan.

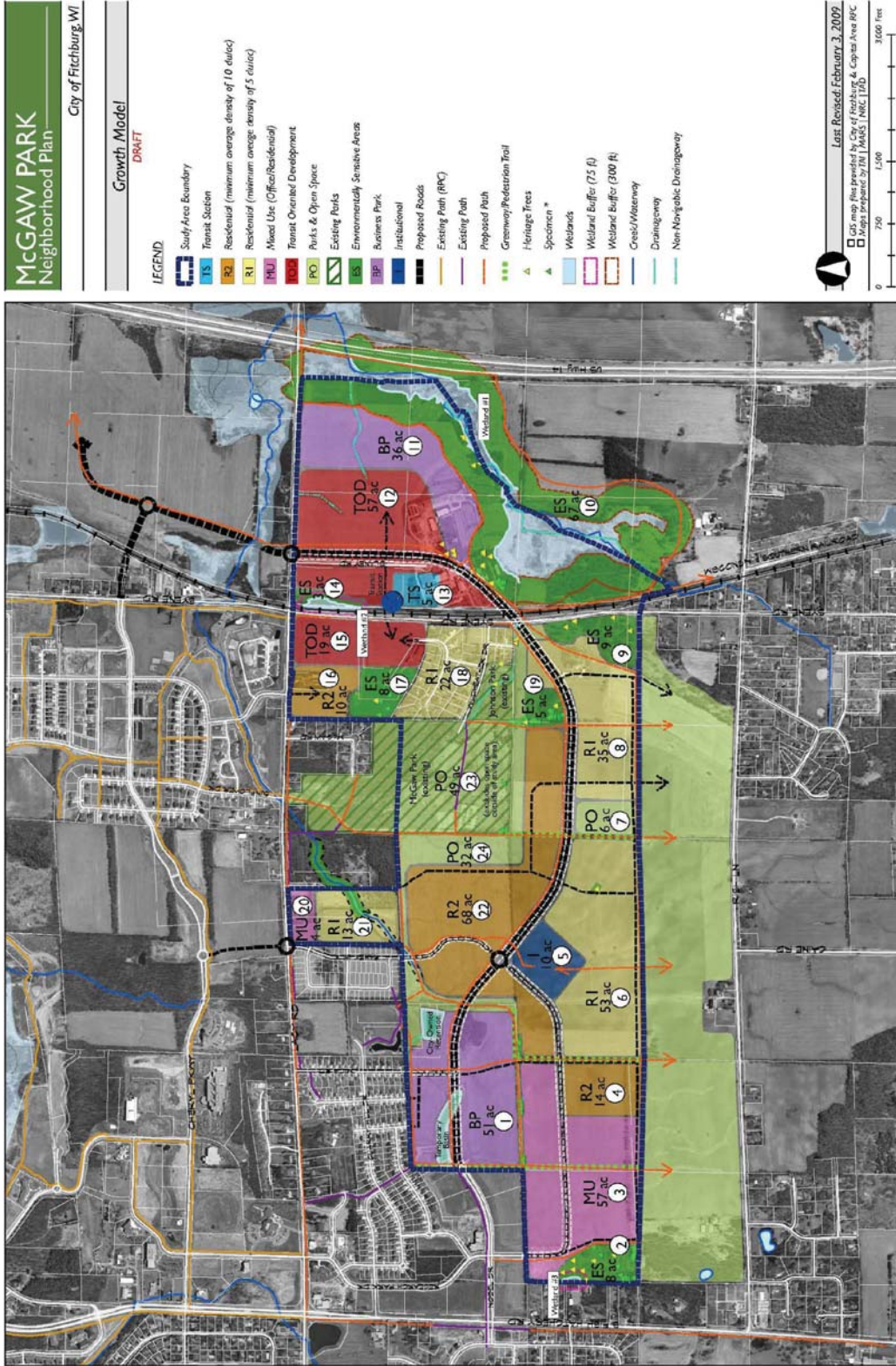


Figure 1.3: Growth Model

**Environmentally Sensitive Areas – Dark Green (Areas 2, 9, 10, 14, 17, and 19)**

Environmentally sensitive areas including waterways, wetlands, steep slopes and floodplains account for over 100-acres of the 712-acre McGaw Park neighborhood. The location of those environmentally sensitive areas predicated the specific locations and types of other land uses described in this plan. There should not be any impervious development allowed within identified environmentally sensitive areas, except as specified in the Comprehensive Plan, and all efforts should be made to restore and maintain these areas in their natural state. The boundaries of the environmentally sensitive areas include the regulatory landscape buffers to ensure their protection and the 300 foot environmental corridors from wetlands that are required by the City of Fitchburg.

**Transit Oriented Development – Red (Area 12, 13, and 15)**

A 76-acre Transit Oriented Development (TOD) area, located in the northeast corner of the neighborhood just south of Lacy Road, forms the eastern node of the McGaw Park neighborhood. Designating the TOD on both sides of Syene Road, is necessary to create a corridor of higher intensity commercial activity. The Transit Oriented Development area is proposed to be highlighted by a transit center, which would be ringed by higher density and mixed use development. The transit center could either be served by light-rail or bus-rapid transit or both. The proposed TOD will include up to 596 residential units, 92,000 sq/ft of retail, and 360,000 sq/ft of office.

**Business Park – Light Purple (Areas I and II)**

A 36-acre business park is planned in the northeast corner of the neighborhood, just south of Lacy Road. A business park is an ideal use for this location because it will serve as a complementary use to the employment planned in the TOD and offers good access and visibility from the US Highway 14. A 51-acre business park is located east of the existing Fitchburg Technology Campus. The Campus should allow office and other commercial land uses compatible with performance standards yet to be determined. Access to this business park would be through an extension of Nobel Road, which currently bisects the existing Fitchburg Technology Campus.

**Mixed-Use – Pink (Areas 3 and 20)**

Two areas are designated for mixed-use development which includes office, residential, and retail. One 4-acre mixed use area is targeted just south of Lacy Road and just east of the existing Waterford Glen Subdivision. Ideal uses include neighborhood service uses such as coffee shop, personal services, convenience or grocery store, carry-out restaurant, and boutique retail. This does not preclude any Business Park type uses. A 57-acre mixed use area is designated for the western most boundary of the neighborhood, just south of the existing Fitchburg Technology Campus. The 57-acre area should balance employment and residential uses.

**Residential (Minimum Average of 5 units/acre) - Light Yellow (Areas 6, 8, 18, and 21)**

Three separate areas, which are centrally located within the McGaw Park neighborhood, have been designated for low-density residential. The low-density residential areas are strategically located to mitigate impacts upon such uses and provide buffers to environmentally sensitive areas. The three low density residential areas constitute 88 acres of buildable area (123 acres minus area for infrastructure and stormwater detention), which would allow for approximately 437 units.

**Medium-Density Residential (Minimum Average of 10 units per acre) – Orange (Areas 4, 16, and 22)**

Three separate areas have been designated for medium-density residential, which can function as a means of enhancing housing options. The medium density residential areas are primarily located in the center of the McGaw neighborhood, and the largest designated area frames the northern portion of the Nobel Road extension. The medium-density residential will serve as a buffer between the more intense commercial, industrial, and transit land uses in the TOD, mixed-use and Business Park land use sections and the low-density single family residential.

## Chapter 9: Transportation Plan

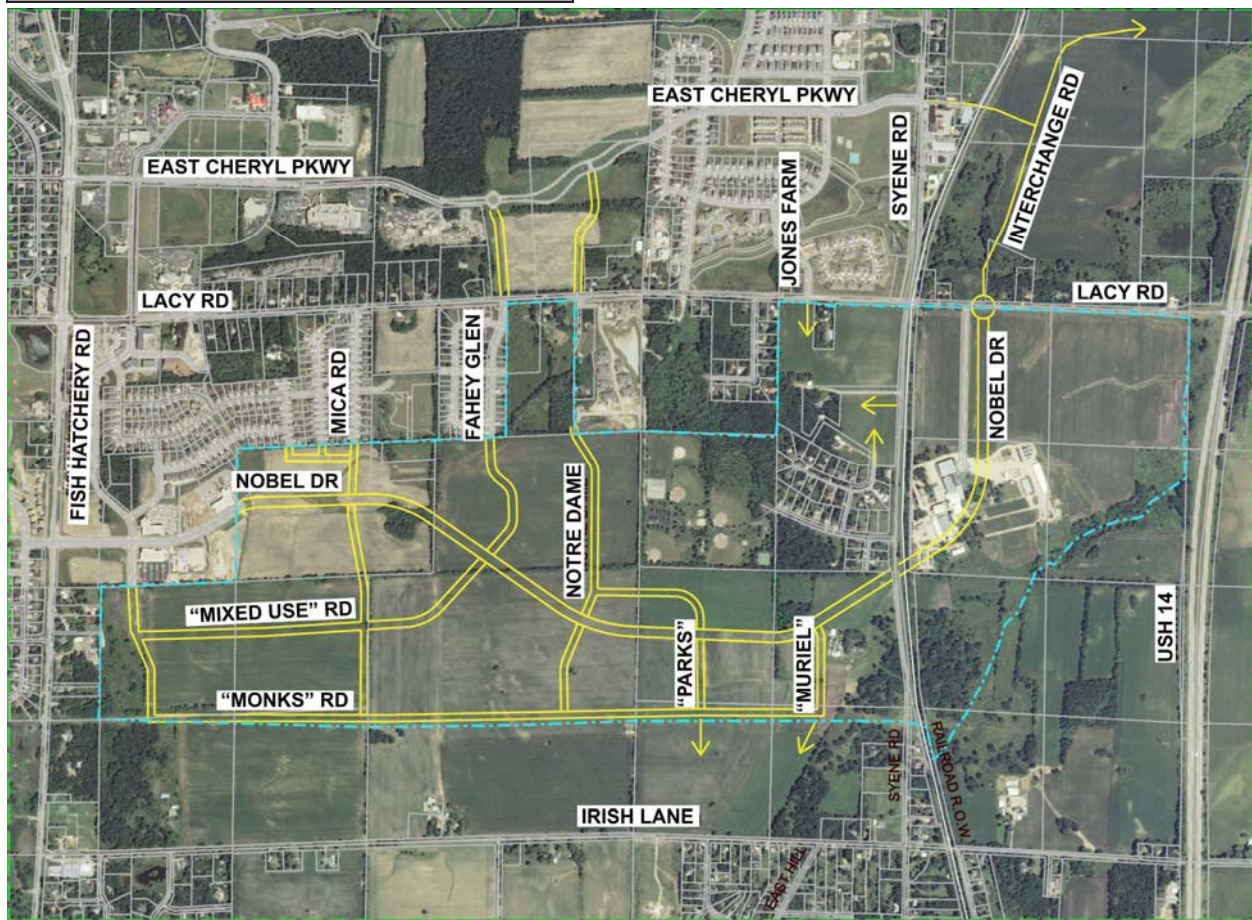


Figure 1.4: Roadway Recommendations

**Nobel Drive**

Nobel Drive has an existing 95-foot ROW east of Fish Hatchery Road. Provide a 100-foot ROW through the MPN to Lacy Road. This cross-section includes: an 18-foot wide median, an 11-foot through travel lane in either direction, a 5-foot bicycle lane in either direction, an 8-foot parking lane on either side of the street, a 9-foot edge/furnishing zone on either side of the street, a 10-foot multi-use trail on the north side of the street, a 5-foot sidewalk on the south side of the street, and a 0.5-foot frontage zone between the multi-use trail/sidewalk and adjacent property.

**Research Park Drive, "Mixed Use Road" and Primary TOD Roadways**

Provide an 80-foot ROW south on Research Park Drive to "Mixed Use Road", on "Mixed Use Road" from Research Park Drive to Nobel Drive, and on primary TOD roadways. This cross-section includes: an 11-foot through travel lane in either direction, a 5-foot bicycle lane in either direction, an 8-foot parking lane on either side of the street, a 7.5-foot edge/furnishing zone on either side of the street, an 8-foot sidewalk on the either side of the street, and a 0.5-foot frontage zone between the sidewalk and adjacent property. This sidewalk is wider to accommodate commercial foot traffic.



### **Fahey Glen Extended**

Provide an 80-foot ROW on Fahey Glen extended. The 80-foot cross-section includes a 20-foot travel/parking/bicycle lane in either direction, a 14-foot edge/furnishing zone on either side of the street, a 5-foot sidewalk on the either side of the street, and a 1-foot frontage zone between the sidewalk and adjacent property. This matches the existing cross-section of Fahey Glen south of Lacy Road.

### **Mica Road and Other MPN Roadways**

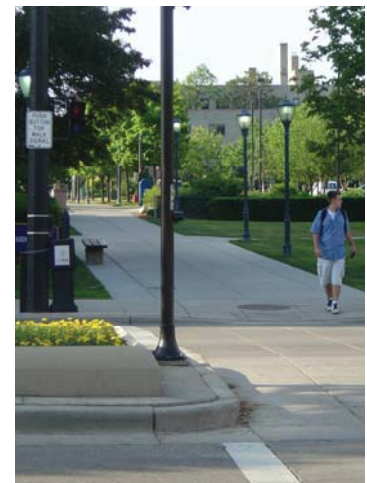
Provide a 66-foot ROW on Mica Road and the remaining MPN roadways. Smaller ROW may be considered on a case by case basis on the local residential streets as development occurs. The 66-foot cross-section includes a 14-foot to 19-foot travel/parking/bicycle lane in either direction, an 8-foot to 13-foot edge/furnishing zone on either side of the street, a 5-foot sidewalk on the either side of the street, and a 1-foot frontage zone between the sidewalk and adjacent property.

### **Alleys**

Provide a 20-foot ROW on alleys within the MPN. The 20-foot cross-section includes 8-foot travel lanes in either direction with a 2-foot frontage zone between the travel way and adjacent property.

### **Dedicated Pedestrian Facilities**

With development of the MPN, sidewalks along Lacy Road should be extended to the Neighborhood's east boundary. Pedestrian sidewalks should also be provided along both sides of all roadways within the MPN borders. If a multi-use facility is provided along one side of a roadway, a sidewalk is not needed on that side of the roadway but should be provided along the other side. In any cases where multi-use trails are located along both sides of a roadway, sidewalks need not be provided.



Note that consideration is being given to light rail transit (LRT) or bus rapid transit (BRT) on the existing dormant rail line that runs parallel to and on the east side of Syene Road. The primary difference between the two forms of transit is LRT uses rails while BRT uses rubber-tire vehicles primarily in dedicated lanes. Both forms of transit minimize commute time compared to typical bus transit by use of greater spacing between stops and technologies such as transit priority signalization. The MPNP includes a station within the TOD land use area east of Syene Road between Lacy Road and Nobel Drive. If LRT is chosen over BRT, consideration should be given to providing a pedestrian bridge over the rail corridor and Syene Road to link the east and west TOD areas. If BRT is chosen over LRT, an at-grade crossing should be sufficient.

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### **LEED-ND Certification Prerequisite for Transit**

A goal of the MPNP is to meet LEED-ND certification. Increased transit service is one of two options to meet the Smart Location & Linkage Prerequisite One: Smart Location (the other being Nearby Neighborhood Assets).

To obtain the LEED-ND certification under the transit option of Smart Location & Linkage Prerequisite, 56 buses may be needed per weekday if the transit service prerequisite is chosen. Options include rerouting routes 44 and 48 and increasing frequency of service and/or providing a new route with service from the South Transfer Station with stops at the Northeast Neighborhood and Green Tech Village. Even if the transit service option for the prerequisite is not chosen, increased service will provide additional points to meeting LEED-ND certification.

### **Light Rail Transit (LRT) or Bus Rapid Transit (BRT)**

The MPNP includes a transit station east of Syene Road between Lacy Road and the Nobel Drive extension. The station should provide comfortable and efficient multi-modal connections between transit, motor vehicle, bicycle and pedestrian modes. LRT or BRT can be used to meet the LEED-ND definition of “adequate transit service” for the MPN.

## **Chapter 10: Economic and Fiscal Impact Analysis**

### **Retail Opportunities**

A retail leakage analysis was conducted to determine the demand and supply for retail goods and identify the potential gaps that could be filled with new retail development. The area is a net attraction for retail stores, likely attracting shoppers from Madison to the north, and more rural areas to the south. As a result, there is a 63% retail surplus, or a total of \$194 million net surplus over a demand of \$308 million. Yet, the entire surplus is accounted for by a very large auto vehicle surplus of \$250 million.

The result is that many categories show a retail opportunity gap, including the following categories: furniture, electronics and appliances, lawn, garden equipment, grocery stores, clothing stores, shoe stores, jewelry & luggage, general merchandise, and office supplies.

### **McGaw Park Neighborhood Commercial and Office Employment Nodes**

Due to the current success of Fitchburg Technology Campus and Fitchburg Center, additional office, light manufacturing, lab space, and supportive commercial is expected to be attracted to the area. The absorption of additional demand will depend on the availability of both of these office parks, as well as pending development at Green Tech Village. Additional access to the site through the construction of the intersection with US 14, as well as planned light rail, will only make the area more attractive for office development.

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## **Fiscal Impact**

There are many variables that will affect the outcome of the fiscal impact, including inflation of expenses, appreciation of existing property values, the total amount of commercial development, the rate / phasing of the development, and rise or fall in expected value of the units. Market appreciation of housing values greatly affects the development. As a result, longer phased build-outs are more greatly affected by market appreciation fluctuation. Note that all values are based upon 2009 dollars. Neither inflation of costs nor appreciation of equalized assessed values was accounted for. Based upon current market values, the McGaw Park build-out will have a **positive** fiscal impact on the city of Fitchburg:

*Phase 1: positive \$974,000 impact on the City of Fitchburg.*

*Phase 2: positive \$1,286,000 impact on the City of Fitchburg.*

*Phase 3: positive \$783,000 impact on the City of Fitchburg.*

Because the levy cap indirectly causes a yearly reduction to the City-wide tax rate, there is a tipping point in the rate / phasing of developments where any new development may become a fiscal burden on the municipality. Due to various levels of service costs for different land uses, a strong mix of uses, including residential and non-residential is planned, in order to assure a positive economic situation.

## **Chapter 11: Implementation**

All phasing will need to be consistent with the Comprehensive Plan. Decisions by city policy makers relative to other neighborhoods and current urban service area development may affect the phasing of the neighborhood.

### Phase 1:

The first phase will begin with extensions of sanitary and water supply from the northern portion of the area toward the south, and from the eastern and western portions of the neighborhood toward the center. Development will proceed in concert with planned developments, plus progress toward the expansion of park space around the perimeter of McGaw Park.

### Phase 2

By the end of this phase, all of the northern portions of the neighborhood are expected to be completed, with infrastructure extended to serve all of these areas, including the completion of Nobel Drive through the area.

### Phase 3

It will primarily consist of developing the southern sections of the neighborhood. All infrastructure would be completed by the end of Phase 3, including roads, water, sanitary, telecom, and transit.

## Chapter 3: Site Characterization

### Land Uses and Ownership

#### Existing Land Uses

Agricultural use and parklands, accounting for over 91% of total acreage, highlight the land use composition for the McGaw Park Neighborhood. The neighborhood includes its namesake 49-acre McGaw Park, which includes both active and passive recreation. The remaining 9% is a mix of agricultural processing (Hartung corn processing plant), rural residential (subdivision of Tarpleywick Hills), and a scattering of large lot residential uses.

**Table 3.1: Existing Land Uses**

Land Use	sq ft	acres	% of total
Agricultural	24,711,723.3	567.3	83.3%
Park & Open Space	2,373,535.8	54.5	8.0%
Agricultural Processing	1,288,545.5	29.6	4.3%
Rural Residential	1,231,484.8	28.3	4.2%
Residential	68,832.8	1.6	0.2%
Study Area(TOTAL)	29,674,122.1	681.2	100.0%

#### Surrounding Land Uses

The surrounding land uses and development type to the south and east are similar to the McGaw Park Neighborhood. The land use to the north includes pockets of denser development; however, it is still dominated by agricultural, park & open space, or rural residential uses. The land uses to the west are more densely developed and includes the Fitchburg Technology Campus and denser residential.

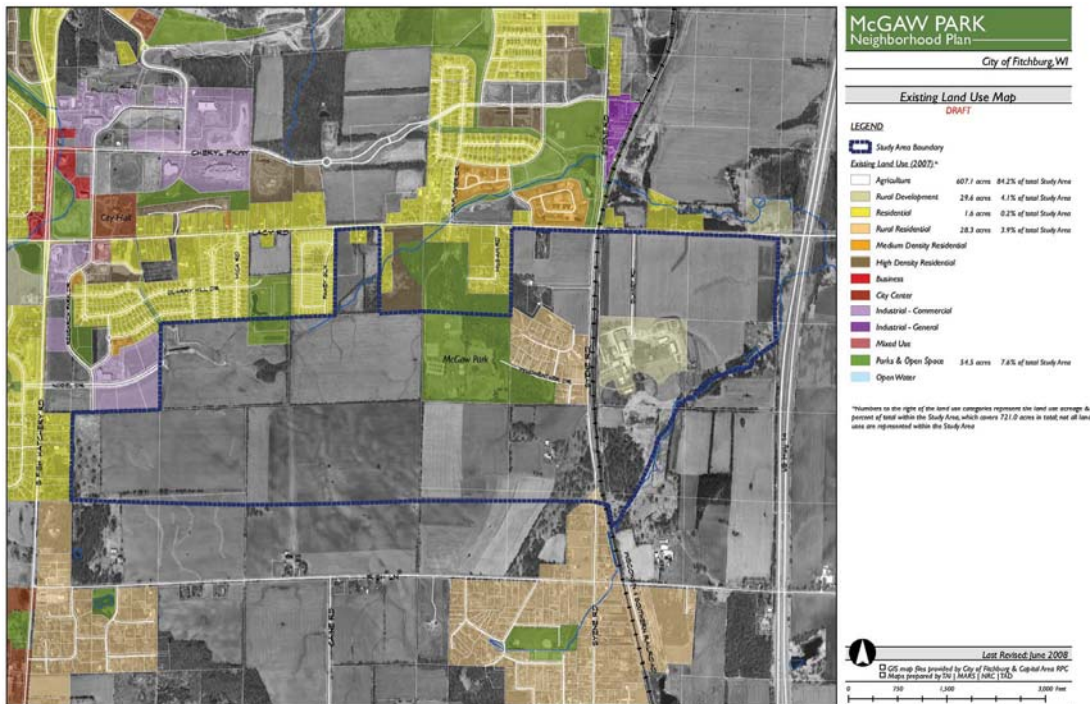


Figure 3.1: Existing Land Use Map

**Property Ownership**

The entire 712 acres, is controlled by only 15 separate land owners, including many very large parcels. The largest property owners include Fahey (155 acres), East Prairie Commons LLC (143 acres) Bowman Farms (85 acres), Stoneman Farm (79 acres), City of Fitchburg (55 acres), and the Fitchburg Technology Campus LLC (53 acres). The large parcels and consolidated property ownership of the Neighborhood will allow for potential future development in a cohesive and consistent manner.

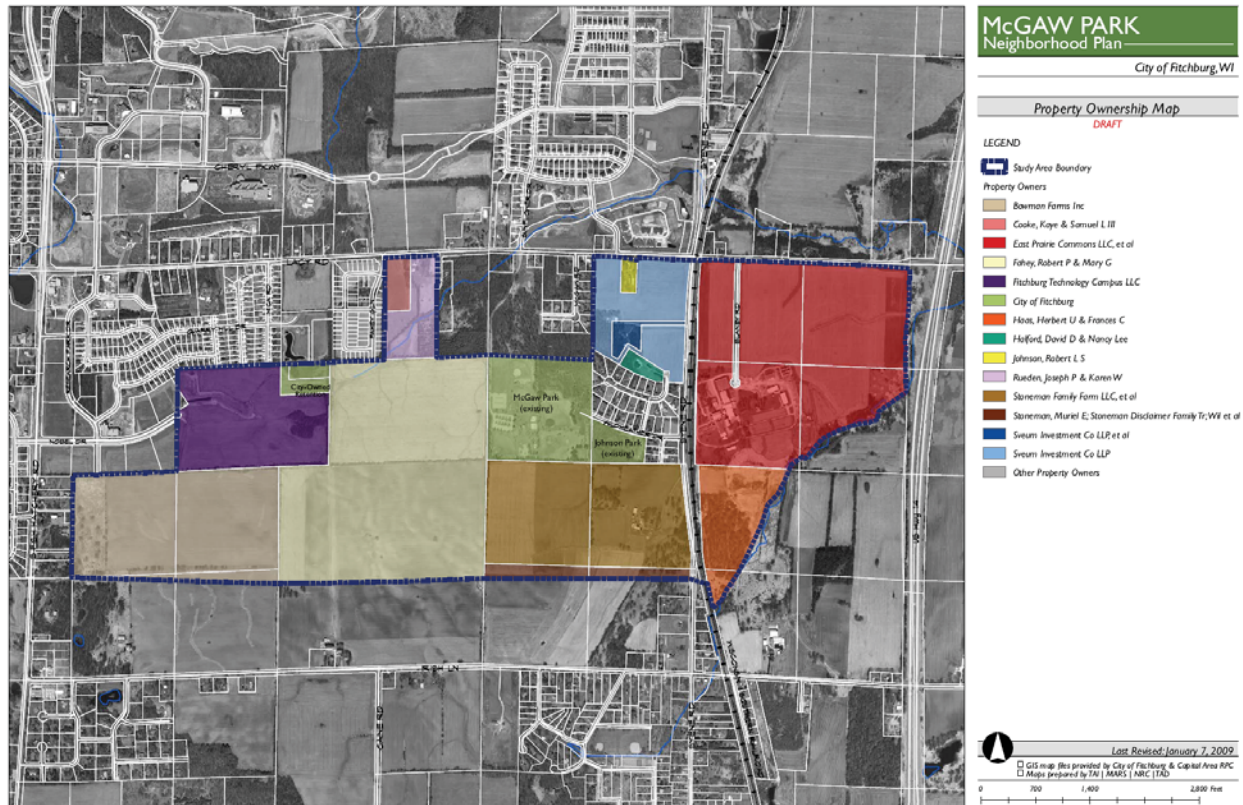


Figure 3.2: Existing Property Ownership Map

**Environmental**

**Threatened, Endangered and Special Concern Species**

Endangered and threatened species are provided protection under the Wisconsin Endangered Species Law (29.604 State Stats.). Special concern (Watch) species are those about which some problem of abundance or distribution is suspected but not yet proven. The main purpose of this category is to focus attention on certain species before they become endangered or threatened. The Natural Heritage Inventory (NHI) contains information about listed species and high quality natural communities that have been previously located by surveyors. The Wisconsin Department

of Natural Resources (WDNR) Bureau of Endangered Resources (BER) administers the Endangered Species Law and provides information about listed species from the NHI for parties considering or pursuing regulated activities that may affect listed species.

### **Natural Heritage Inventory Screening**

National Resource Consultants (NRC), on behalf of the City of Fitchburg, requested a WDNR - BER NHI screening review for the study area in May 2008. A response letter dated June 11, 2008 from WDNR-BER, provided specific information regarding the potential presence of endangered resources within one mile of the study area (and two miles for aquatic species). The NHI information received by NRC guided subsequent detailed survey efforts of listed species.

The NHI review detailed four plant species which have the potential to occur within the study area if appropriate habitat exists. Information collected on each species was obtained from a variety of sources, including: the WDNR Endangered and Threatened species website (WDNR, 2008), Atlas of Wisconsin Prairie and Savanna Flora (T. Cochrane and H. Iltis, 2000), A Great Lakes Wetland Flora (S. Chadde, 2002), the PLANTS Database (USDA, NRCS, 2008) and the Wisconsin State Herbarium Website. Detailed habitat preferences and optimal identification period for each species is provided below:

- Giant yellow hyssop (*Agastache nepetoides*) is a plant listed as Threatened in the State of Wisconsin. This species prefers woodlands and forest edges, thickets, and river margins. Flowering occurs from early June through mid-October. Optimal identification period is from mid-July to late September.
- Pale-purple coneflower (*Echinacea pallida*) is a plant listed as Threatened in the State of Wisconsin. This species can be found in mesic prairies, railroad right-of-ways and roadsides, less frequently in dry open habitats such as gravelly slopes and gravel pits. Flowering occurs from late June to August and then fruiting from August onward.
- Slim-stem small-reedgrass (*Calamagrostis stricta*) is a plant listed as Special Concern in the State of Wisconsin. This species prefers dry to moist dunes, barrens, and dolomite or sandstone ledges, mostly near the Great Lakes, and also calcareous wetlands. Blooming occurs throughout the month of June, with July and August being the optimal identification period.
- Small white lady's slipper (*Cypripedium candidum*) is a plant listed as Threatened in the State of Wisconsin. This species prefers calcareous wet fens and prairies. Blooming occurs from mid-May through mid-June, with optimal identification from mid-May through mid-June.

The information gathered from the NHI screening results was evaluated and a subsequent field evaluation plan was developed to focus field survey efforts on these specific species. The field survey methods and results are discussed below.

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## **Detailed Rare Species Habitat Assessments and Species Specific Surveys**

### *Methods*

Detailed information on the specific habitat and ecosystem requirements, along with flowering period, was collected for each of the species listed within the NHI review. This information was then used to maximize the likelihood of detection by surveying appropriate habitat during the optimal identification period. Based on this information, it was determined two rare plant investigations (spring and late summer) would sufficiently cover the optimal identification periods of all the species listed in the NHI review. As a result NRC conducted the spring rare plant investigations during various times in early June 2008 and the subsequent late summer investigation in September 2008 following the methodology outlined below.

A systematic approach using a controlled, meander survey was used to ensure adequate coverage of the site variations present within each community. This approach is particularly suited for detecting rare and significant plant assemblages or community types within the designated survey area. The methodology entails a thorough search of potentially suitable habitat based on a species' known characteristics, historic records of species occurrences, and existing site conditions. Each woodland community, railroad right-of-way, tree line, and wetland community was investigated for rare plants.

### *Results*

No rare plants were found within the proposed McGaw Park Neighborhood. Many of the rare plants listed in the NHI review require specialized habitats which are often unique to an area because of severe habitat rarity or habitat loss and/or degradation caused by various anthropogenic influences. In addition to habitat requirements, rare plants can also remain dormant for many years, which is often the case for many rare orchid species. For these reasons, rare plants will often be found in very localized areas, and in the case of rare orchids, may not flower for many years at a time.

Some of the specialized habitats required by the rare plants listed in the NHI review include: exposed bedrock, unique wetland types (i.e. fen), prairie remnants, sand barrens and/or sandstone ledges. None of these habitats were observed within the study area.



Specific habitats required by the small white lady's

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slipper and the slim-stem small-reedgrass are not present within the study area. Potential habitat exists for the giant yellow hyssop along woodland edges within the study area; however, this species was not observed during the 2008 investigations. In addition, potential habitat exists for the pale-purple coneflower along the old railroad right-of-way within the study area. This species was also not observed during the 2008 investigations.

### Summary

Although the NHI screening information listed four historical occurrences of threatened or special concern species within the general vicinity of the study area, during NRC's field surveys no current occurrences of these species or any other listed species were found within the study area. Based on no positive identification of such species and the lack of adequate habitat, rare species are not a constraint to the development of the neighborhood plan.

### Cultural Resource Screening

Historic structures, archaeological sites, and cemeteries/burial sites may be subject to local, state or federal laws and regulations, such as Section 106 of the National Historic Preservation Act related to historic properties and archaeological sites and the Wis. Stat 157.70 Disposition of Human Remains associated with cemetery/burial sites. NRC conducted a cultural resource screening for the study area and immediately adjacent or contiguous properties utilizing the Wisconsin Historic Preservation Database (WHPD) maintained by the Wisconsin Historic Society. The following categories of WHPD were evaluated:

- Archeological Site Inventory (ASI)
- Architectural Historic Inventory (AHI)
- Bibliography of Archeological Reports

The cultural resource screening conducted by NRC is for planning purposes only and solely identifies documented cultural resources within the WHPD. Unknown and/or undocumented significant cultural resources may be present within the study area. Screening may not fulfill the requirements set forth under Section 106 of the National Historic Preservation Act which may be necessary in order to comply with Section 404 of the Clean Water Act or other federal programs. Although unlikely based on the screening results, field archeological investigations may be required through these regulatory programs prior to development.

### Archaeological Site Inventory (ASI)

NRC reviewed known cultural resources within a one-mile radius of the study area. Two literature searches were conducted to review known cultural resources in the study area and within a one-mile radius. The first record search reviewed records of the Office of State Archaeologist, State Historical Society Archaeological Site Inventory Database (ASI) for archaeological and burial sites listed as of May 20, 2008. The inclusion of these cultural resources in the ASI may require additional investigation and are subject to Wis. Stat. 157.70 if it is a cemetery/burial site.



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The results of the ASI search indicate no cultural resource sites within the study area and one cultural resource site recorded within a one-mile radius of the study area. The FRPA Site 47-DA-1075 is located approximately  $\frac{3}{4}$  mile north of the study area in Section 10. The site is described as an isolated find (a secondary reduction flake) of lithic material. The cultural affiliation of this artifact is probably of unknown Prehistoric culture. The status, in relation, to eligibility and inclusion to the National Register of Historic Places is currently unknown.

#### Architectural Historic Inventory

The second search reviewed the records of the Wisconsin State Historic Preservation Office (SHPO) Architecture and History Inventory Database (AHI) for historic properties listed as of May 20, 2008. The inclusion of these sites in the AHI conveys no special status or advantage, the listing is merely a record of the property.

The results of the AHI search indicate no listed historic properties in the study area. Three historic properties are recorded within a one-mile radius of the study area. The first historic property is the McCoy Farmhouse, located approximately  $\frac{3}{4}$  of a mile north of the study area in Section 11. The McCoy Farmhouse is registered as an historic structure of Italianate style built in 1852. The site was listed on the National Register of Historic Places (NRHP) in 1980. The second historic property is Spooner's 1852 Swan Creek Farm and is Fitchburg's most recent addition to the National Register. The farm is located along Lacy Road, close to County Highway MM in Section 13. The Swan Creek Farm is actually registered under the name "Nichols Haight Farmstead". The third historic property is known as AHI #4638 (Lake View Stagecoach Hotel), located approximately  $\frac{3}{4}$  of a mile SE of the study area in Section 24. The structure is of the Greek Revival style with no known date. This historic property has not been evaluated for inclusion to the State Register and the NRHP.

An additional search of anthropological / archaeological material using the Atlas of Wisconsin Archaeology compiled by C. E. Brown and W.W. Hixon & Co. in 1924, revealed two Indian Trails approximately  $\frac{1}{4}$  of a mile outside the study area tracking parallel with the eastern and western boundaries of the Study area (Map 2.2). The Indian Trails marked by Brown and Hixon & Co. in 1924 is an approximate estimate for the location of a pedestrian path noted by individuals and recorded by Brown and Hixon & Co. Brown and Hixon & Co. recorded hundreds of trails throughout Wisconsin from conversations and historical recollection of numerous Wisconsin citizens. It should be noted that the "Indian Trails" are approximate locations that are rarely intact due to systematical agriculture and timber activities.

Local historic resources not designated on federal or state lists include the Rueden farmhouse which is a designated City landmark located within the study area at 5329 Lacy Road. Additionally, the Old Fitchburg School lies just outside of the study area near Syene and Lacy Roads which is now a residence. A map of cultural resources can be found on page 7-2 of the Comprehensive Plan.

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Other historical properties and archaeological sites may be present in or near the study area but have not been discovered or reported to the State Historic Preservation Office and the Office of State Archaeologist of Wisconsin. This literature review is intended to assist with fulfilling any local, state or federal laws and regulations, such as Section 106 of the National Historic Preservation Act related to historic properties and archaeological sites and the Wis. Stat 157.70 Disposition of Human Remains associated with cemetery/burial sites located in the study area.

## Wetlands

### Wetland Determination and Delineation

NRC performed a wetland determination and delineation of the McGaw Park Neighborhood study area. The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands within the study area. The wetland delineation was completed by Jeff Kraemer and Stacy J. Steinke of NRC and Eric Heggelund of J.D. Knowles and Associates, Inc. on July 2, 2008.

Three wetland areas were identified in the study area. Wetland 1 (W-1) is a diverse wetland complex located along the eastern boundary of the study area. Wetland 2 (W-2) is a narrow wetland located between a railroad corridor and a farmed upland in the north-central portion of the study area. Wetland 3 (W-3) is an excavated pond located along the western study area boundary. Summaries of the characteristics of each wetland can be found below. A complete wetland delineation report was prepared; the report and supporting documentation are available separately.

Wetlands that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act (CWA) and the jurisdictional regulatory authority lies with the United States Army Corps of Engineers (USACE). Additionally, the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapter 30 Wisconsin State Statutes, Act 6, and Wisconsin Administrative Code NR 103. Isolated wetlands no longer protected by federal law are also protected by NR 117.

### *Methods*

Wetland determinations were based on the criteria and methods outlined in the *United States Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1 (1987) and subsequent guidance documents (USACE 1991, 1992), *Guidelines for Submitting Wetland Delineations in Wisconsin* to the St. Paul District Corps of Engineers (USACE 1996), and the *Basic Guide to Wisconsin's Wetlands and their Boundaries* (Wisconsin Department of Administration Coastal Management Program 1995).

canopy, and a herbaceous understory with few shrubs. These oak savanna remnants appear to have been historically pastured, and the composition of the herbaceous layer reflects this: brome and other pastures grasses, and old field vegetation.

Across Syene Road from Community 7, there is a large oak-hickory forest within the study area to which field survey access was not granted. However, observations from the road and from current aerial photos indicate that the forest contains many mature oak and hickory trees and may be an overgrown oak savanna. The forest patch is fairly large for this area, and is in a key location for wildlife habitat and movement corridors, being immediately adjacent to Wetland I and its riparian corridor.

### **Heritage and Specimen Trees**

Thirty-three Heritage trees were located in the study area, thirty of which were oaks. Fifty-six specimen trees were located (Figure 3.4). In general, these trees tended to be clustered together in significant groupings which should be preserved. The most significant groupings are within Community 5, one of the remnant oak savannas, and in Community 1, an oak-hickory forest. Community 1 occurs as two separate patches of woods, with a treeline connecting the patches. Many of the specimen trees, and one of the Heritage trees, occur within that connecting treeline. This treeline, with its heavy cover contributed by the mature trees, is an important wildlife movement corridor between the two forest patches.

## **Environmental Corridor**

### **Mapping and Identification**

The environmental corridors designated within the neighborhood plan consist of wetlands, wetland buffers, waterways, woodlands, and clusters of heritage and specimen trees. These areas are identified within the neighborhood plan as environmentally sensitive areas (ES). Additionally, existing and proposed parks and open space are included as environmental corridor and identified as PO within the neighborhood plan.

### **Constraints**

#### **Woodland and tree preservation**

All woodlands identified with the exception of the small boxelder woodlots (Communities 4 and 6, Figure 3.4) within the neighborhood plan shall be preserved and opportunities for enhancement and restoration shall be explored. Cutting of Heritage and specimen trees shall be avoided with all practical measures. Development and infrastructure planning shall comply with all City policy and ordinances with respect to woodland and tree preservation requirements including the pending Tree Preservation Ordinance and the existing Tree and Shrub Ordinance.



## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor  
Matthew J. Frank, Secretary

101 S. Webster St.  
Box 7921  
Madison, Wisconsin 53707-7921  
Telephone 608-266-2621  
FAX 608-267-3579  
TTY 608-267-6897

June 11, 2008

Joshua Kapfer  
Natural Resources Consulting, Inc.  
119 South Main Street  
Cottage Grove, WI 53527

SUBJECT: Endangered Resources Review (ERIR Log # 08-114)  
Proposed McGaw Neighborhood data request, City of Fitchburg in Dane County,  
WI

Dear Mr. Kapfer,

The Bureau of Endangered Resources has reviewed the project area described in your review request received May 28, 2008 for the proposed McGaw Neighborhood data request, City of Fitchburg in Dane County, WI.

Our Natural Heritage Inventory (NHI) data files contain the following information for the project site located in T6N R9E Sections 14 & 15 in Dane County. In addition to the proposed project site, endangered resource information is provided for an area within one mile of the project's location (and two miles for aquatic species). This information is provided so impacts to nearby endangered resources can be assessed and to assist in determining which rare species may occur in the project's impact area. If the described habitat types exist in the project's impact area, then species that occur nearby may be present at the proposed location. Endangered resources documented within and around the project area include:

- **Shrub-carr** - This wetland community is dominated by tall shrubs such as red-osier dogwood (*Cornus stolonifera*), meadow-sweet (*Spiraea alba*), and various willows (*Salix discolor*, *S. bebbiana*, and *S. gracilis*). Canada bluejoint grass (*Calamagrostis canadensis*) is often very common. Associates are similar to those found in Alder Thickets and tussock-type Sedge Meadows. This type is common and widespread in southern Wisconsin but also occurs in the north.
- **Southern Sedge Meadow** - Widespread in southern Wisconsin, this open wetland community is most typically dominated by tussock sedge (*Carex stricta*) and Canada bluejoint grass (*Calamagrostis canadensis*). Common associates are water-horehound (*Lycopus uniflorus*), paniced aster (*Aster simplex*), blue flag (*Iris virginica*), Canada goldenrod (*Solidago canadensis*), spotted joe-pye-weed (*Eupatorium maculatum*), broad-leaved cat-tail (*Typha latifolia*), and swamp milkweed (*Asclepias incarnata*). Reed canary grass (*Phalaris arundinacea*) may be dominant in grazed and/or ditched stands. Ditched stands can succeed quickly to Shrub-Carr.

Our data files also contain historical records (generally, records that are 25 years old or older) of rare species known to occur within the vicinity of the project site. Unfortunately, the Bureau does not have more current survey information documenting the continued existence of this species in this area. These older records are included, however, as an indication of species which may occur in the project area if appropriate habitat still exists:

- **Giant yellow hyssop** (*Agastache nepetoides*), a plant listed as Threatened in Wisconsin, prefers woodlands and forest edges, thickets, and river margins. Flowering occurs from early June through mid-October. Optimal identification period is from mid-July to late September.
- **Pale-purple coneflower** (*Echinacea pallida*), a plant listed as Threatened in Wisconsin, prefers prairies and prairie remnants along roads and railroads. Blooming occurs from early June through mid-July. Optimal identification period is from early June to mid-August.
- **Slim-stem small-reedgrass** (*Calamagrostis stricta*), a plant of Special Concern in Wisconsin, prefers dry to moist dunes, barrens, and dolomite or sandstone ledges, mostly near the Great Lakes, and also calcareous wetlands. Blooming occurs throughout the month of June. Optimal identification period is from early July to late August.
- **Small white lady's slipper** (*Cypripedium candidum*), a plant listed as Threatened in Wisconsin, prefers calcareous wet fens and prairies. Blooming occurs from mid-May through mid-June. Optimal identification period is from mid-May through mid-June.

*Endangered and Threatened species are provided protection under the Wisconsin Endangered Species Law (29.604 State Stats.). Special Concern (Watch) species are those about which some problem of abundance or distribution is suspected but not yet proved. The main purpose of this category is to focus attention on certain species before they become endangered or threatened.*

Comprehensive endangered resource surveys have not been completed for the project area. As a result, our data files may be incomplete. The lack of additional known occurrences does not preclude the possibility that other endangered resources may be present. Occurrences of rare species are only in our NHI database if the site has been previously surveyed for that species or group during the appropriate season, and an observation was reported and entered into the database. As such, **absence of an NHI occurrence in a specific area should not be used to infer absence of rare species.** Evaluations of the possible presence of rare species on the project site should be based on whether suitable habitat for the species exists within the project area.

#### **Follow-up Actions:**

1. Because this residential development project covers a large area containing isolated areas wetlands and is located immediately adjacent Swan Creek, it is recommended that strict **erosion and siltation controls** be practiced surrounding these sensitive aquatic resources during the entire development period.
  - a. If and when these procedures are implemented, please note that erosion control netting (also known as erosion control blankets, erosion mats or erosion mesh netting) used to prevent erosion during the establishment of vegetation can have detrimental effects on local snake and other wildlife populations. Plastic netting without independent movement of strands can easily entrap snakes moving through the area, leading to dehydration, desiccation, and eventually mortality. Netting that contains biodegradable thread with the "leno" or "gauze" weave (contains strands that are able to move independently) appears to have the least impact on snakes.
  - b. A large number of the plant species and natural communities listed above are found in **wetland habitats**. I recommend avoiding all impacts to onsite wetlands, which should include installing erosion fencing around all disturbance areas. Avoiding all impacts to onsite wetlands will also avoid potential impacts to plant species.

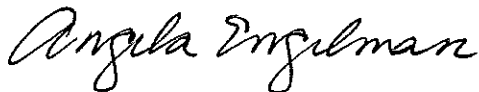
2. There are **three plant species** that have been recorded within the project boundary that have Threatened status. Please note that all listed plant species that occur on public lands are protected under the Wisconsin Endangered Species Law (29.604 State Stats.). I recommend you try to avoid all impacts to these species by avoiding all areas of suitable habitat or conducting surveys to confirm presence or absence. Even though these plants are historic records it is very likely they may be present in the on-site woodlots, along railroads grades, or in wetlands that are within the project boundaries. Please contact our office for additional information on survey protocols if you suspect that suitable habitat for the plants exists within the project site.
3. **Slim-stem small-reedgrass** is a plant of Special Concern and has been recorded within the project boundaries and may occur in areas of suitable habitat such as wetlands. I recommend surveys be conducted for this species in areas of suitable habitat.
4. There are two natural communities, **Shrub-carr** and **Southern Sedge Meadow**, within the vicinity of the project area. These are both wetland communities and provide suitable habitat to support some of the species listed above. The Natural Heritage Inventory Program tracks examples of all types of Wisconsin's natural communities that are deemed significant because of their undisturbed condition, size, what occurs around them, or for other reasons. Natural communities may contain rare or declining species and their protection should be incorporated into the project design as much as possible. Consider incorporating buffers along the edges of these areas.

The specific location of endangered resources is sensitive information that has been provided to you for the analysis and review of this project. Exact locations should not be released or reproduced in any publicly disseminated documents.

**This letter is for informational purposes and only addresses endangered resource issues. This letter does not constitute Department of Natural Resources authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the Department.**

Please contact me at (608) 266-5241 if you have any questions about this information.

Sincerely,



Angela Engelman, ER/6  
Endangered Resources Program

cc:

Cathy Bleser – SCR/Fitchburg  
Jeff Schure – SCR/Fitchburg  
Laura Madsen – SCR/Fitchburg

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## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor  
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101 S. Webster St.  
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August 21, 2008

INF-SC-2008-13-67907/69951-69956

Charles Bauer  
Natural Resources Consulting  
209 Commerce Pkwy; PO BOX 128  
Cottage Grove, WI 53527

RE: Request for Navigability Determination for Unnamed Waterways, located in the McGaw Neighborhood, City of Fitchburg, Dane County, Sections 14 & 15, T6N, R9E.

Dear Mr. Bauer:

This letter is in response to your request for a navigability determination on the subject streams in the McGaw Neighborhood, City of Fitchburg, Dane County. I visited this site with you on 6/26/2008. In Wisconsin, the Supreme Court has defined a navigable waterway as one which has a defined bed and banks and carries enough water to float a canoe or other watercraft during the spring high water periods. Based on this definition and the conditions observed at your site, the navigability/public ownership of waterways on this property (as located on the enclosed map) have been determined as follows:

INF-SC-2008-13-67907 = Site 1, SE Q of NW Q, Sec. 15, T6N, R9E - This waterway does not have a Waterbody Identification Code (WBIC) and does not appear on the DNR Watershed Surface Water Viewer. It was determined to be non-navigable.

INF-SC-2008-13-69951 = Site 2, NE Q of SW Q, Sec. 15, T6N, R9E – This waterway does not have a WBIC and does not appear on the DNR Watershed Surface Water Viewer. It was determined to be non-navigable.

INF-SC-2008-13-69952 = Site 3, NW Q of SE Q, Sec. 15, T6N, R9E and NE Q and Sec. 15, T6N R9E - Headwaters of WBIC 803800, Swan Creek. This waterway is non-navigable to the west of the point on the map. The point of navigability was determined by DNR Water Management Specialist, and is documented in INF-SC-2008-13-4020LR.

INF-SC-2008-13-69953 = Site 4, SE Q of NW Q, Sec. 14, T6N, R9E – This waterway does not have a WBIC and does not appear on the DNR Watershed Surface Water Viewer. It was determined to be non-navigable.

INF-SC-2008-13-69954 = Site 5, NW Q of NE Q, Sec. 14, T6N, R9E - This waterway does not have a WBIC and does not appear on the DNR Watershed Surface Water Viewer. It was determined to be non-navigable.

INF-SC-2008-13-69955 = Site 6, NE Q of NE Q, Sec. 14, T6N, R9E – This waterway does not have a WBIC and does not appear on the DNR Watershed Surface Water Viewer. It is a grassed waterway draining to WBIC 5036636, to E edge of Sec 14. This waterway was determined to be non-navigable.


INF-SC-2008-13-69956 = Site 7 (SE Q of NE Q, and NW and SW Q of SE Q, Sec. 14, T6N, R9E, WBIC 5036636) – This waterway has a defined bed and banks and sufficient water to float a small watercraft. It is navigable.

Chapter 30, Wis. Stats., permits are needed for work in and near the waterways determined to be navigable. Information on these regulations and application materials are available on the DNR web site at [www.dnr.wi.gov](http://www.dnr.wi.gov).

Certain activities may also require permits from Dane County and you should contact that agency before beginning any construction at this site.

If you have any questions about these determinations, please call Cami Peterson at (608) 275-3208.

Sincerely,



Donna Sefton *for*  
Water Management Specialist

cc: Jeff Schure, DNR Water Management Specialist  
Cami Peterson, DNR Water Management Specialist  
Dane County Zoning Administrator  
Dane County Land and Water Resources

Tom Hovel - Fitchburg



## North McGaw Park Neighborhood Plan Wildlife Species Potentially Occurring in the Study Area

REPTILES AND AMPHIBIANS	
Common Name	Scientific Name
Northern Brown Snake	<i>Storeria dekayi</i>
Northern Red Bellied Snake	<i>Storeria occipitomaculata</i>
Eastern Plains Garter Snake	<i>Thamnophis radix radix</i>
Common Garter Snake	<i>Thamnophis sirtalis</i>
Western Fox Snake	<i>Elaphe vulpina vulpina</i>
Eastern Milk Snake	<i>Lampropeltis triangulum</i>
Blue Spotted Salamander	<i>Ambystoma laterale</i>
Eastern Tiger Salamander	<i>Ambystoma tigrinum tigrinum</i>
American Toad	<i>Bufo americanus</i>
Gray Tree Frog	<i>Hyla versicolor</i>
Wood Frog	<i>Rana sylvantica</i>
BIRDS	
Common Name	Scientific Name
Wood Duck	<i>Aix sponsa</i>
Turkey Vulture	<i>Cathartes aura</i>
Cooper's Hawk	<i>Accipiter cooperli</i>
Sharp-Shinned Hawk	<i>Accipiter striatus</i>
Red Tailed Hawk	<i>Buteo jamaicensis</i>
Broad-Winged Hawk	<i>Buteo platypterus</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Mourning Dove	<i>Zenaida macroura</i>
Yellow Billed Cuckoo	<i>Coccyzus americanus</i>
Black Billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
Screech Owl	<i>Otus asio</i>
Great Horned Owl	<i>Bubo virginianus</i>
Barred Owl	<i>Strix varia</i>
Saw-Whet Owl	<i>Aegolius acadicus</i>
Whip-Poor-Will	<i>Caprimulgus vociferus</i>
Common Nighthawk	<i>Chordeiles minor</i>
Chimney Swift	<i>Chaetura pelagica</i>
Ruby-Throated Hummingbird	<i>Archilochus colubris</i>
Common Flicker	<i>Colaptes auratus</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>
Red Bellied Woodpecker	<i>Melanerpes carolinus</i>
Yellow Bellied Sapsucker	<i>Sphyrapicus varius</i>
Harry Woodpecker	<i>Picoides villosus</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Great Crested Flycatcher	<i>Myiarchus crinitus</i>
Eastern Phoebe	<i>Sayornis phoebe</i>
Least Flycatcher	<i>Empidonax minimum</i>
Eastern Wood-Pewee	<i>Conopus virens</i>
Tree Swallow	<i>Iridoprocne bicolor</i>
Rough Winged Swallow	<i>Stelgidopteryx ruficollis</i>
Blue Jay	<i>Cyanocitta cristata</i>
Common Crow	<i>Corvus brachyrhynchos</i>

## North McGaw Park Neighborhood Plan Wildlife Species Potentially Occurring in the Study Area

BIRDS	
Common Name	Scientific Name
Black Capped Chickadee	<i>Parus atricapillus</i>
Tufted Titmouse	<i>Parus bicolor</i>
White Breasted Nuthatch	<i>Sitta carolinensis</i>
Brown Creeper	<i>Certhia familiaris</i>
House Wren	<i>Troglodytes aedon</i>
Gray Catbird	<i>Dumetella carolinensis</i>
Brown Thrasher	<i>Toxostoma rulum</i>
Robin	<i>Turdus migratorius</i>
Wood Thrush	<i>Hylocichla mustelina</i>
Veery	<i>Catharus fuscenscens</i>
Blue Gray Gnatcatcher	<i>Poliophtila caerulea</i>
European Starling	<i>Sturnus vulgaris</i>
Yellow Throated Vireo	<i>Vireo flavifrons</i>
Red Eyed Vireo	<i>Vireo olivaceus</i>
Black-And-White Warbler	<i>Mniotilta varia</i>
Golden-Winged Warbler	<i>Vermivora chrysoptera</i>
Tennessee Warbler	<i>Vermivora peregrina</i>
Nashville Warbler	<i>Vermivora ruficapilla</i>
Black-Throated Green Warbler	<i>Dendroica virens</i>
Cerulean Warbler	<i>Dendroica cerulea</i>
Chestnut-Sided Warbler	<i>Dendroica pensylvanica</i>
Pine Warbler	<i>Dendroica pinus</i>
Ovenbird	<i>Seiurus aurocapillus</i>
Wilson's Warbler	<i>Wilsonia pusilla</i>
Canada Warbler	<i>Wilsonia canadensis</i>
American Redstart	<i>Setophaga ruticilla</i>
House Sparrow	<i>Passer domesticus</i>
Common Grackle	<i>Quiscalus quiscula</i>
Brown Headed Cowbird	<i>Molothrus ater</i>
Northern Oriole	<i>Icterus galbula</i>
Scarlet Tanager	<i>Piranga olivacea</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
Rose-Breasted Grosbeak	<i>Pheucticus ludovicianus</i>
Evening Grosbeak	<i>Hesperiphona vespertina</i>
Indigo Bunting	<i>Passerina cyanea</i>
Purple Finch	<i>Carpodacus purpureus</i>
Pine Siskin	<i>Carduelis pinus</i>
American Goldfinch	<i>Carduelis tristis</i>
Rufous-Sided Towhee	<i>Pipilo erythrophthalmus</i>
Sharp-Tailed Sparrow	<i>Ammodramus caudacuta</i>
Slate-Colored Junco	<i>Junco hyemalis</i>
Chipping Sparrow	<i>Spizella passerina</i>
White-Throated Sparrow	<i>Zonotrichia albicollis</i>
Fox Sparrow	<i>Passerella iliaca</i>
Song Sparrow	<i>Melospiza melodia</i>

## North McGaw Park Neighborhood Plan Wildlife Species Potentially Occurring in the Study Area

MAMMALS	
Common Name	Scientific Name
Opossum	<i>Didelphis marsupialis</i>
Eastern Mole	<i>Scalopus aquaticus</i>
Little Brown Bat	<i>Myotis lucifugus</i>
Eastern Long-Eared Bat	<i>Myotis keenii</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Red Bat	<i>Lasiurus borealis</i>
Hoary Bat	<i>Lasiurus cinereus</i>
Eastern Pipistrelle	<i>Pipistrellus subblavus</i>
Cottontail Rabbit	<i>Sylvagus flordanus</i>
Woodchuck	<i>Marmota monax</i>
Eastern Chipmunk	<i>Tamias striatus</i>
Gray Squirrel	<i>Sciurus carolinensis</i>
Fox Squirrel	<i>Sciurus niger</i>
Southern Flying Squirrel	<i>Glaucomys volans</i>
Northern White-Footed Mouse	<i>Peromyscus leucopus</i>
Woodland Vole	<i>Microtus pinetorum</i>
Common Rat	<i>Rattus rattus</i>
House Mouse	<i>Mus musculus</i>
Coyote	<i>Canis latrans</i>
Red Fox	<i>Vulpes fulva</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>
Raccoon	<i>Procyon lotor</i>
Short-Tailed Weasel	<i>Mustela erminea</i>
Long-Tailed Weasel	<i>Mustela frenata</i>
Least Weasel	<i>Mustela nivalis</i>
Striped Skunk	<i>Mephitis mephitis</i>
White-Tailed Deer	<i>Odocoileus virginianus</i>

**North McGaw Park Neighborhood  
Community 1: Oak Hickory Forest**

Scientific Name <sup>1</sup>	Common Name	Coefficient of Conservatism <sup>2</sup>	Physiognomy	Region 3 Wetland Coefficient
<i>Acer negundo</i>	box elder	0	Tree	FACW-
<i>Acer saccharinum</i>	silver maple	2	Tree	FACW
<i>ALLIARIA PETIOLATA</i>	garlic mustard		Forb	FAC
<i>ARCTIUM MINUS</i>	common burdock		Forb	UPL
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	5	Forb	FACW-
<i>Carya ovata</i>	shagbark hickory	5	Tree	FACU
<i>CELASTRUS ORBICULATA</i>	Asian bittersweet		Woody Vine	NI
<i>Celtis occidentalis</i>	northern hackberry	4	Tree	FAC-
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	2	Forb	FACU
<i>Cornus alternifolia</i>	pogoda dogwood	7	Tree	[UPL]
<i>Fragaria virginiana</i>	wild strawberry	1	Forb	FAC-
<i>Fraxinus pennsylvanica</i>	green ash	2	Tree	FACW
<i>Galium aparine</i>	sticky-willy	2	Forb	FACU
<i>Galium triflorum</i>	sweet-scented bedstraw	5	Forb	FACU+
<i>Geum aleppicum</i>	yellow avens	3	Forb	FAC+
<i>Geum canadense</i>	white avens	2	Forb	FAC
<i>Hackelia virginiana</i>	beggar's-lice	3	Forb	FAC-
<i>HEMEROCALLIS FULVA</i>	orange daylily		Forb	
<i>Juglans cinerea</i>	butternut	6	Tree	FACU+
<i>LEONURUS CARDIACA</i>	motherwort		Forb	[UPL]
<i>LONICERA X BELLA</i>	Bell's honeysuckle		Shrub	[FACU]
<i>MORUS ALBA</i>	white mulberry		Tree	FAC
<i>Onoclea sensibilis</i>	sensitive fern	5	Fern	FACW
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	Woody Vine	FAC-
<i>Pinus resinosa</i>	red pine	7	Tree	FACU
<i>Pinus strobus</i>	eastern white pine	5	Tree	FACU
<i>Podophyllum peltatum</i>	may-apple	4	Forb	FACU
<i>Polygonatum biflorum</i>	Solomon's-seal	4	Forb	FACU
<i>Polygonum virginianum</i>	jumpseed	7	Forb	FAC
<i>Populus grandidentata</i>	large-toothed aspen	3	Tree	FACU
<i>Populus tremuloides</i>	quaking aspen	2	Tree	FAC
<i>Prunus pensylvanica</i>	pin cherry	4	Tree	FACU-*
<i>Prunus serotina</i>	wild black cherry	3	Tree	FACU
<i>Quercus macrocarpa</i>	bur oak	5	Tree	FAC-
<i>Quercus rubra</i>	northern red oak	5	Tree	FACU
<i>RHAMNUS CATHARTICA</i>	common buckthorn		Tree	FAC-
<i>Ribes cynosbati</i>	dogberry	3	Shrub	[UPL]
<i>ROSA MULTIFLORA</i>	multiflora rose		Shrub	FACU
<i>Rubus allegheniensis</i>	Allegheny blackberry	2	Shrub	FACU+
<i>Rubus occidentalis</i>	black raspberry	2	Shrub	[UPL]
<i>Sambucus canadensis</i>	elderberry	3	Shrub	FACW-
<i>Ulmus americana</i>	American elm	3	Tree	FACW-
<i>Ulmus rubra</i>	slippery elm	4	Tree	FAC
<i>Viburnum acerifolium</i>	dockmackie	7	Shrub	UPL*
<i>Viburnum opulus</i>	high-bush cranberry	6	Shrub	FACW
<i>Viola sororia</i>	door-yard violet	3	Forb	FAC-
<i>Vitis riparia</i>	river bank grape	2	Woody Vine	FACW-
<i>Zanthoxylum americanum</i>	common prickly-ash	3	Shrub	UPL

<sup>1</sup>All capital letters denotes a non-native species

<sup>2</sup>Each native species is assigned a coefficient of conservatism (C) following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a C of 0, is given to plants that have demonstrated little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a C of 10 is applied to plants that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no C value is applied to these.

**FQI Calculations**

	Species Richness	Mean C Value	FQI
Native	39	3.7	23.4
All Species	48	3.0	21.1

**North McGaw Park Neighborhood  
Community 2: Honeysuckle Shrub Dominated**

Scientific Name <sup>1</sup>	Common Name	Coefficient of Conservatism <sup>2</sup>	Physiognomy	Region 3 Wetland Coefficient
<i>Acer negundo</i>	box elder	0	Tree	FACW-
<i>Achillea millefolium</i>	common yarrow	1	Forb	FACU
<i>ALLIARIA PETIOLATA</i>	garlic mustard		Forb	FAC
<i>ARCTIUM MINUS</i>	common burdock		Forb	UPL
<i>Athyrium filix-femina</i>	common lady fern	5	Fern	FAC
<i>BROMUS INERMIS</i>	smooth brome		Grass	UPL
<i>Carya ovata</i>	shagbark hickory	5	Tree	FACU
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	2	Forb	FACU
<i>CIRSIUM VULGARE</i>	bull thistle		Forb	FACU-
<i>Cornus alternifolia</i>	pogoda dogwood	7	Tree	[UPL]
<i>Cornus racemosa</i>	gray dogwood	2	Shrub	FACW-
<i>DACTYLIS GLOMERATA</i>	orchard grass		Grass	FACU
<i>DAUCUS CAROTA</i>	Queen Anne's-lace		Forb	
<i>Geum aleppicum</i>	yellow avens	3	Forb	FAC+
<i>Geum canadense</i>	white avens	2	Forb	FAC
<i>GLECHOMA HEDERACEA</i>	creeping-Charlie		Forb	FACU
<i>Goodyera pubescens</i>	downy rattlesnake-plantain	7	Forb	FAC*
<i>Hackelia virginiana</i>	beggar's-lice	3	Forb	FAC-
<i>HIERACIUM AURANTIACUM</i>	devil's-paintbrush		Forb	[UPL]
<i>Juniperus virginiana</i>	eastern red-cedar	3	Tree	FACU
<i>LONICERA X BELLA</i>	Bell's honeysuckle		Shrub	[FACU]
<i>MORUS ALBA</i>	white mulberry		Tree	FAC
<i>Oxalis stricta</i>	common yellow oxalis	0	Forb	FACU
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	Woody Vine	FAC-
<i>PASTINACA SATIVA</i>	wild parsnip		Forb	[UPL]
<i>PHALARIS ARUNDINACEA</i>	reed canary grass		Grass	FACW+
<i>PHLEUM PRATENSE</i>	timothy		Grass	FACU
<i>PICEA ABIES</i>	Norway spruce		Tree	[UPL]
<i>Pinus resinosa</i>	red pine	7	Tree	FACU
<i>Pinus strobus</i>	eastern white pine	5	Tree	FACU
<i>PLANTAGO MAJOR</i>	plantain		Forb	FAC+
<i>POA PRATENSIS</i>	Kentucky bluegrass		Grass	FAC-
<i>Polygonatum biflorum</i>	Solomon's-seal	4	Forb	FACU
<i>Polygonum virginianum</i>	jumpseed	7	Forb	FAC
<i>Prunus serotina</i>	wild black cherry	3	Tree	FACU
<i>Quercus macrocarpa</i>	bur oak	5	Tree	FAC-
<i>RHAMNUS CATHARTICA</i>	common buckthorn		Tree	FAC-
<i>Rhus hirta</i>	velvet sumac	2	Shrub	[UPL]
<i>Rhus glabra</i>	smooth sumac	2	Shrub	[UPL]
<i>ROBINIA PSEUDOACACIA</i>	black locust		Tree	FACU-
<i>ROSA MULTIFLORA</i>	multiflora rose		Shrub	FACU
<i>Rubus allegheniensis</i>	Allegheny blackberry	2	Shrub	FACU+
<i>Rubus occidentalis</i>	black raspberry	2	Shrub	[UPL]
<i>Solidago canadensis</i>	common goldenrod	1	Forb	FACU
<i>TARAXACUM OFFICINALE</i>	common dandelion		Forb	FACU
<i>Thuja occidentalis</i>	northern white-cedar	9	Tree	FACW
<i>Toxicodendron radicans</i> subsp. <i>negundo</i>	poison-ivy	4	Woody Vine	FAC+
<i>TRIFOLIUM PRATENSE</i>	red clover		Forb	FACU+
<i>Ulmus americana</i>	American elm	3	Tree	FACW-
<i>Urtica dioica</i>	stinging nettle	1	Forb	FAC+
<i>Viburnum opulus</i>	high-bush cranberry	6	Shrub	FACW
<i>Vitis riparia</i>	river bank grape	2	Woody Vine	FACW-

<sup>1</sup>All capital letters denotes a non-native species

<sup>2</sup>Each native species is assigned a coefficient of conservatism (C) following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a C of 0, is given to plants that have demonstrated little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a C of 10 is applied to plants that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no C value is applied to these.

**FQI Calculations**

	Species Richness	Mean C Value	FQI
Native	31	3.5	19.8
All Species	52	2.1	15.3

**North McGaw Park Neighborhood  
Community 3: Oak, Walnut, Black Locust Forest**

Scientific Name <sup>1</sup>	Common Name	Coefficient of Conservatism <sup>2</sup>	Physiognomy	Region 3 Wetland Coefficient
<i>Acer negundo</i>	box elder	0	Tree	FACW-
<i>ALLIARIA PETIOLATA</i>	garlic mustard		Forb	FAC
<i>Allium tricoccum</i>	wild leek	6	Forb	FACU+
<i>ARCTIUM MINUS</i>	common burdock		Forb	UPL
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	5	Forb	FACW-
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	2	Forb	FACU
<i>Dryopteris carthusiana</i>	toothed wood fern	7	Fern	FACW-
<i>Galium aparine</i>	sticky-willy	2	Forb	FACU
<i>Galium triflorum</i>	sweet-scented bedstraw	5	Forb	FACU+
<i>Geum aleppicum</i>	yellow avens	3	Forb	FAC+
<i>Geum canadense</i>	white avens	2	Forb	FAC
<i>GLECHOMA HEDERACEA</i>	creeping-Charlie		Forb	FACU
<i>Hackelia virginiana</i>	beggar's-lice	3	Forb	FAC-
<i>HESPERIS MATRONALIS</i>	dame's rocket		Forb	[UPL]
<i>Juglans nigra</i>	black walnut	3	Tree	FACU
<i>LEONURUS CARDIACA</i>	motherwort		Forb	[UPL]
<i>LONICERA X BELLA</i>	Bell's honeysuckle		Shrub	[FACU]
<i>MORUS ALBA</i>	white mulberry		Tree	FAC
<i>Oxalis stricta</i>	common yellow oxalis	0	Forb	FACU
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	Woody Vine	FAC-
<i>PHALARIS ARUNDINACEA</i>	reed canary grass		Grass	FACW+
<i>Podophyllum peltatum</i>	may-apple	4	Forb	FACU
<i>Polygonatum biflorum</i>	Solomon's-seal	4	Forb	FACU
<i>Polygonum virginianum</i>	jumpseed	7	Forb	FAC
<i>Prunus serotina</i>	wild black cherry	3	Tree	FACU
<i>Quercus alba</i>	white oak	7	Tree	FACU
<i>Quercus macrocarpa</i>	bur oak	5	Tree	FAC-
<i>Quercus rubra</i>	northern red oak	5	Tree	FACU
<i>RHAMNUS CATHARTICA</i>	common buckthorn		Tree	FAC-
<i>Ribes cynosbati</i>	dogberry	3	Shrub	[UPL]
<i>ROBINIA PSEUDOACACIA</i>	black locust		Tree	FACU-
<i>ROSA MULTIFLORA</i>	multiflora rose		Shrub	FACU
<i>Rubus allegheniensis</i>	Allegheny blackberry	2	Shrub	FACU+
<i>TARAXACUM OFFICINALE</i>	common dandelion		Forb	FACU
<i>Urtica dioica</i>	stinging nettle	1	Forb	FAC+
<i>Vitis riparia</i>	river bank grape	2	Woody Vine	FACW-

<sup>1</sup>All capital letters denotes a non-native species

<sup>2</sup>Each native species is assigned a coefficient of conservatism (C) following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a C of 0, is given to plants that have demonstrated little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a C of 10 is applied to plants that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no C value is applied to these.

**FQI Calculations**

	Species Richness	Mean C Value	FQI
Native	24	3.6	17.6
All Species	36	2.4	14.3

**North McGaw Park Neighborhood  
Community 4: Box Elder Woodland**

Scientific Name <sup>1</sup>	Common Name	Coefficient of Conservatism <sup>2</sup>	Physiognomy	Region 3 Wetland Coefficient
<i>Acer negundo</i>	box elder	0	Tree	FACW-
<i>ALLIARIA PETIOLATA</i>	garlic mustard		Forb	FAC
<i>Ambrosia artemisiifolia</i>	common ragweed	0	Forb	FACU
<i>Ambrosia trifida</i>	giant ragweed	0	Forb	FAC+
<i>ARCTIUM MINUS</i>	common burdock		Forb	UPL
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	2	Forb	FACU
<i>Geum aleppicum</i>	yellow avens	3	Forb	FAC+
<i>Geum canadense</i>	white avens	2	Forb	FAC
<i>Hackelia virginiana</i>	beggar's-lice	3	Forb	FAC-
<i>LEONURUS CARDIACA</i>	motherwort		Forb	[UPL]
<i>LONICERA X BELLA</i>	Bell's honeysuckle		Shrub	[FACU]
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	Woody Vine	FAC-
<i>Polygonatum biflorum</i>	Solomon's-seal	4	Forb	FACU
<i>Polygonum virginianum</i>	jumpseed	7	Forb	FAC
<i>Prunus serotina</i>	wild black cherry	3	Tree	FACU
<i>Quercus macrocarpa</i>	bur oak	5	Tree	FAC-
<i>RHAMNUS CATHARTICA</i>	common buckthorn		Tree	FAC-
<i>Ribes cynosbati</i>	dogberry	3	Shrub	[UPL]
<i>ROSA MULTIFLORA</i>	multiflora rose		Shrub	FACU
<i>Rubus allegheniensis</i>	Allegheny blackberry	2	Shrub	FACU+
<i>SOLANUM DULCAMARA</i>	bittersweet nightshade		Woody Vine	FAC
<i>TARAXACUM OFFICINALE</i>	common dandelion		Forb	FACU
<i>Vitis riparia</i>	river bank grape	2	Woody Vine	FACW-

<sup>1</sup>All capital letters denotes a non-native species

<sup>2</sup>Each native species is assigned a coefficient of conservatism (C) following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a C of 0, is given to plants that have demonstrated little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a C of 10 is applied to plants that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no C value is applied to these.

**FQI Calculations**

	Species Richness	Mean C Value	FQI
Native	15	2.7	10.6
All Species	23	1.8	8.5

**North McGaw Park Neighborhood  
Community 5: Remnant Oak Savannah**

Scientific Name <sup>1</sup>	Common Name	Coefficient of Conservatism <sup>2</sup>	Physiognomy	Region 3 Wetland Coefficient
<i>Acer negundo</i>	box elder	0	Tree	FACW-
<i>Achillea millefolium</i>	common yarrow	1	Forb	FACU
<i>Agrimonia gryposepala</i>	common agrimony	2	Forb	FACU+
<i>ALLIARIA PETIOLATA</i>	garlic mustard		Forb	FAC
<i>Ambrosia artemisiifolia</i>	common ragweed	0	Forb	FACU
<i>Asclepias syriaca</i>	common milkweed	1	Forb	UPL
<i>Asclepias verticillata</i>	whorled milkweed	2	Forb	
<i>Aster pilosus</i>	awl aster	1	Forb	FACU+
<i>BROMUS INERMIS</i>	smooth brome		Grass	UPL
<i>Carya ovata</i>	shagbark hickory	5	Tree	FACU
<i>Coryza canadensis</i>	fleabane	0	Forb	FAC-
<i>Cornus racemosa</i>	gray dogwood	2	Shrub	FACW-
<i>DAUCUS CAROTA</i>	Queen Anne's-lace		Forb	
<i>ECHINOCHLOA CRUSGALLI</i>	barnyard grass		Grass	FACW
<i>ELAEAGNUS UMBELLATA</i>	autumn olive		Shrub	[UPL]
<i>Galium triflorum</i>	sweet-scented bedstraw	5	Forb	FACU+
<i>GLECHOMA HEDERACEA</i>	creeping-Charlie		Forb	FACU
<i>Gleditsia triacanthos</i>	honey locust	7	Tree	FAC
<i>Juglans nigra</i>	black walnut	3	Tree	FACU
<i>LONICERA X BELLA</i>	Bell's honeysuckle		Shrub	[FACU]
<i>MORUS ALBA</i>	white mulberry		Tree	FAC
<i>MORUS ALBA</i>	white mulberry		Tree	FAC
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	Woody Vine	FAC-
<i>PHALARIS ARUNDINACEA</i>	reed canary grass		Grass	FACW+
<i>PLANTAGO LANCEOLATA</i>	ribgrass		Forb	FAC
<i>POA PRATENSIS</i>	Kentucky bluegrass		Grass	FAC-
<i>Polygonatum biflorum</i>	Solomon's-seal	4	Forb	FACU
<i>POTENTILLA RECTA</i>	sulphur five-fingers		Forb	[UPL]
<i>Prunus serotina</i>	wild black cherry	3	Tree	FACU
<i>Quercus alba</i>	white oak	7	Tree	FACU
<i>Quercus macrocarpa</i>	bur oak	5	Tree	FAC-
<i>Quercus rubra</i>	northern red oak	5	Tree	FACU
<i>RHAMNUS CATHARTICA</i>	common buckthorn		Tree	FAC-
<i>Rhus glabra</i>	smooth sumac	2	Shrub	[UPL]
<i>Rhus hirta</i>	velvet sumac	2	Shrub	[UPL]
<i>ROSA MULTIFLORA</i>	multiflora rose		Shrub	FACU
<i>RUMEX ACETOSELLA</i>	common sheep sorrel		Forb	FAC
<i>Solidago canadensis</i>	common goldenrod	1	Forb	FACU
<i>TARAXACUM OFFICINALE</i>	common dandelion		Forb	FACU
<i>TRIFOLIUM AUREUM</i>	golden clover		Forb	
<i>TRIFOLIUM HYBRIDUM</i>	alsike clover		Forb	FAC-
<i>TRIFOLIUM PRATENSE</i>	red clover		Forb	FACU+
<i>Ulmus americana</i>	American elm	3	Tree	FACW-
<i>Urtica dioica</i>	stinging nettle	1	Forb	FAC+
<i>VERBASCUM THAPSUS</i>	common mullein		Forb	[UPL]
<i>Verbena stricta</i>	hoary verbena	3	Forb	
<i>Viburnum acerifolium</i>	dockmackie	7	Shrub	UPL*
<i>Viburnum opulus</i>	high-bush cranberry	6	Shrub	FACW
<i>Viola sororia</i>	door-yard violet	3	Forb	FAC-
<i>Vitis riparia</i>	river bank grape	2	Woody Vine	FACW-

<sup>1</sup>All capital letters denotes a non-native species

<sup>2</sup>Each native species is assigned a coefficient of conservatism (C) following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a C of 0, is given to plants that have demonstrated little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a C of 10 is applied to plants that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no C value is applied to these.

**FQI Calculations**

	Species Richness	Mean C Value	FQI
Native	29	3.0	16.3
All Species	50	1.8	12.4



**North McGaw Park Neighborhood  
Community 6: Box Elder Forest**

Scientific Name <sup>1</sup>	Common Name	Coefficient of Conservatism <sup>2</sup>	Physiognomy	Region 3 Wetland Coefficient
<i>Acer negundo</i>	box elder	0	Tree	FACW-
<i>ALLIARIA PETIOLATA</i>	garlic mustard		Forb	FAC
<i>Ambrosia trifida</i>	giant ragweed	0	Forb	FAC+
<i>ARCTIUM MINUS</i>	common burdock		Forb	UPL
<i>Celtis occidentalis</i>	northern hackberry	4	Tree	FAC-
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	2	Forb	FACU
<i>CONVALLARIA MAJALIS</i>	lily-of-the-valley		Forb	
<i>Fraxinus pennsylvanica</i>	green ash	2	Tree	FACW
<i>Galium aparine</i>	sticky-willy	2	Forb	FACU
<i>Geum aleppicum</i>	yellow avens	3	Forb	FAC+
<i>Geum canadense</i>	white avens	2	Forb	FAC
<i>Hackelia virginiana</i>	beggar's-lice	3	Forb	FAC-
<i>HEMEROCALLIS FULVA</i>	orange daylily		Forb	
<i>HESPERIS MATRONALIS</i>	dame's rocket		Forb	[UPL]
<i>LEONURUS CARDIACA</i>	motherwort		Forb	[UPL]
<i>LONICERA X BELLA</i>	Bell's honeysuckle		Shrub	[FACU]
<i>Osmorhiza longistylis</i>	smooth sweet cicely	4	Forb	FACU-
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	Woody Vine	FAC-
<i>PHALARIS ARUNDINACEA</i>	reed canary grass		Grass	FACW+
<i>POA PRATENSIS</i>	Kentucky bluegrass		Grass	FAC-
<i>RHAMNUS CATHARTICA</i>	common buckthorn		Tree	FAC-
<i>Ribes cynosbati</i>	dogberry	3	Shrub	[UPL]
<i>ROBINIA PSEUDOACACIA</i>	black locust		Tree	FACU-
<i>Rubus allegheniensis</i>	Allegheny blackberry	2	Shrub	FACU+
<i>TARAXACUM OFFICINALE</i>	common dandelion		Forb	FACU
<i>Ulmus americana</i>	American elm	3	Tree	FACW-
<i>Urtica dioica</i>	stinging nettle	1	Forb	FAC+
<i>Viola sororia</i>	door-yard violet	3	Forb	FAC-
<i>Vitis riparia</i>	river bank grape	2	Woody Vine	FACW-

<sup>1</sup>All capital letters denotes a non-native species

<sup>2</sup>Each native species is assigned a coefficient of conservatism (C) following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a C of 0, is given to plants that have demonstrated little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a C of 10 is applied to plants that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no C value is applied to these.

### FQI Calculations

	Species Richness	Mean C Value	FQI
Native	17	2.4	9.9
All Species	29	1.4	7.6

**North McGaw Park Neighborhood  
Community 7: Remnant Oak Savannah**

Scientific Name <sup>1</sup>	Common Name	Coefficient of Conservatism <sup>2</sup>	Physiognomy	Region 3 Wetland Coefficient
<i>Achillea millefolium</i>	common yarrow	1	Forb	FACU
ALLIARIA PETIOLATA	garlic mustard		Forb	FAC
<i>Ambrosia artemisiifolia</i>	common ragweed	0	Forb	FACU
ARCTIUM MINUS	common burdock		Forb	UPL
<i>Asclepias syriaca</i>	common milkweed	1	Forb	UPL
BROMUS INERMIS	smooth brome		Grass	UPL
<i>Carex woodii</i>	pretty sedge	9	Sedge	FAC
<i>Carya ovata</i>	shagbark hickory	5	Tree	FACU
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	2	Forb	FACU
CIRSIUM ARVENSE	Canada thistle		Forb	FACU
DACTYLIS GLOMERATA	orchard grass		Grass	FACU
DAUCUS CAROTA	Queen Anne's-lace		Forb	
<i>Dioscorea villosa</i>	colic-root	4	Herb. Vine	FAC-
<i>Erigeron annuus</i>	annual fleabane	0	Forb	FAC-
<i>Fragaria vesca</i>	hillside strawberry	3	Forb	
<i>Geum canadense</i>	white avens	2	Forb	FAC
GLECHOMA HEDERACEA	creeping-Charlie		Forb	FACU
HYPERICUM PERFORATUM	St. John's-wort		Forb	[UPL]
<i>Juncus tenuis</i>	path rush	1	Rush	FAC
<i>Juniperus virginiana</i>	eastern red-cedar	3	Tree	FACU
LONICERA X BELLA	Bell's honeysuckle		Shrub	[FACU]
MORUS ALBA	white mulberry		Tree	FAC
<i>Osmorhiza longistylis</i>	smooth sweet cicely	4	Forb	FACU-
<i>Oxalis stricta</i>	common yellow oxalis	0	Forb	FACU
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	Woody Vine	FAC-
PASTINACA SATIVA	wild parsnip		Forb	[UPL]
PHLEUM PRATENSE	timothy		Grass	FACU
<i>Physalis virginiana</i>	Virginia ground-cherry	4	Forb	[UPL]
PLANTAGO LANCEOLATA	ribgrass		Forb	FAC
PLANTAGO MAJOR	plantain		Forb	FAC+
POA PRATENSIS	Kentucky bluegrass		Grass	FAC-
<i>Populus tremuloides</i>	quaking aspen	2	Tree	FAC
<i>Prunus serotina</i>	wild black cherry	3	Tree	FACU
<i>Quercus alba</i>	white oak	7	Tree	FACU
<i>Quercus macrocarpa</i>	bur oak	5	Tree	FAC-
<i>Quercus rubra</i>	northern red oak	5	Tree	FACU
RANUNCULUS ACRIS	common buttercup		Forb	FACW-
RHAMNUS CATHARTICA	common buckthorn		Tree	FAC-
<i>Ribes cynosbati</i>	dogberry	3	Shrub	[UPL]
ROBINIA PSEUDOACACIA	black locust		Tree	FACU-
ROSA MULTIFLORA	multiflora rose		Shrub	FACU
<i>Rubus occidentalis</i>	black raspberry	2	Shrub	[UPL]
SOLANUM DULCAMARA	bittersweet nightshade		Woody Vine	FAC
<i>Solidago canadensis</i>	common goldenrod	1	Forb	FACU
TARAXACUM OFFICINALE	common dandelion		Forb	FACU
TRIFOLIUM AUREUM	golden clover		Forb	
TRIFOLIUM PRATENSE	red clover		Forb	FACU+
<i>Ulmus americana</i>	American elm	3	Tree	FACW-
VERBASCUM THAPSUS	common mullein		Forb	[UPL]
<i>Viola spp</i>	Violet			
<i>Vitis riparia</i>	river bank grape	2	Woody Vine	FACW-

<sup>1</sup>All capital letters denotes a non-native species

<sup>2</sup>Each native species is assigned a coefficient of conservatism (C) following the methods described by Swink and Wilhelm (1994) and Wilhelm and Masters (1995). Coefficients of conservatism range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a C of 0, is given to plants that have demonstrated little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a C of 10 is applied to plants that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no C value is applied to these.

**FQI Calculations**

	Species Richness	Mean C Value	FQI
Native	26	3.0	15.1
All Species	51	1.5	10.8

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak Hickory Forest; 1-1
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Quercus rubra</i>	northern red oak	25.2	~	D	Standing dead
<b>Total Number of Live Trees: 0</b>		<b>Total Basal Area: 0</b>				
<b>SHRUBS:</b> Shrubs represent approximately 80-90% cover; comprised of mostly black cherry and American elm saplings and common buckthorn.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak Hickory Forest; 1-2
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Prunus serotina</i>	wild black cherry	8.3	0.38	I	Scaring on side
2	<i>Prunus serotina</i>	wild black cherry	11.3	0.70	CD	Healthy
3	<i>Ulmus americana</i>	American elm	5.5	0.16	I	Healthy
4	<i>Prunus serotina</i>	wild black cherry	7.8	0.33	I	Some herbivory on leaf; otherwise healthy
5	<i>Prunus serotina</i>	wild black cherry	5.1	0.14	O	Some herbivory on leaf; otherwise healthy
6	<i>Quercus macrocarpa</i>	bur oak	34.3	6.42	D	Some bore holes; few large branches dead
7	<i>Quercus macrocarpa</i>	bur oak	19.3	2.03	CD	Patches with bark fallen off; canopy looks healthy
<b>Total Number of Live Trees: 7</b>		<b>Total Basal Area: 10.16</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 50-60% cover; comprised of common buckthorn, box elder seedlings and honeysuckle shrubs.</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak Hickory Forest; 1-3
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>MORUS ALBA</i>	white mulberry	5.1	0.14	O	Split
2	<i>Acer negundo</i>	box elder	5	0.14	O	Healthy
3	<i>Prunus serotina</i>	black cherry	9.2	0.46	I	Forked with # 4; healthy
4	<i>Prunus serotina</i>	black cherry	7.4	0.30	I	Forked with # 3; healthy
<b>Total Number of Live Trees: 4</b>		<b>Total Basal Area: 1.04</b>				
<b>SHRUBS:</b> Shrubs represent approximately 30-40% cover; comprised of mostly box elder saplings and occasionally dogberry ( <i>Ribes cynosbati</i> ), common buckthorn, and red elm shrubs/saplings.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak Hickory Forest; 1-4
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Populus grandidentata</i>	large-toothed aspen	8.6	0.40	CD	Healthy
<b>Total Number of Live Trees: 1</b>		<b>Total Basal Area: 0.40</b>				
<b>SHRUBS:</b> Shrubs represent approximately 25-35% cover; comprised of mostly box elder saplings and occasionally dogberry ( <i>Ribes cynosbati</i> ) and common buckthorn shrubs.						

<sup>1</sup>Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup>All capital letters denotes a non-native species.

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Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak Hickory Forest; 1-5
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Populus tremuloides</i>	quaking aspen	10	0.55	CD	Healthy
2	<i>Populus tremuloides</i>	quaking aspen	6.9	0.26	I	Healthy
	<i>Populus tremuloides</i>	quaking aspen	4.2	~	O	Dead
3	<i>Populus tremuloides</i>	quaking aspen	8.2	0.37	CD	Healthy
4	<i>Populus tremuloides</i>	quaking aspen	6	0.20	I	Healthy
5	<i>Pinus resinosa</i>	red pine	5.9	0.19	O	Healthy
6	<i>Pinus resinosa</i>	red pine	6.4	0.22	O	
7	<i>Pinus resinosa</i>	red pine	5.5	0.16	O	
8	<i>Juglans cinerea</i>	butternut	14.9	1.21	D	Bore holes; most of tree dead
<b>Total Number of Live Trees: 8</b>		<b>Total Basal Area: 3.16</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 60-70% cover; and are comprised of nearly equal portions of box elder saplings, common buckthorn shrubs, aspen sapling, dogberry (<i>Ribes cynosbati</i>) shrubs, honeysuckle shrubs, shagbark hickory seedlings, and red elm saplings.</p>						

<sup>1</sup>Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup>All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak Hickory Forest; 1-6
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Prunus serotina</i>	wild black cherry	9.9	0.53	CD	Healthy
	<i>Ulmus americana</i>	American elm	9	~		Standing dead
2	<i>Prunus serotina</i>	wild black cherry	13.7	1.02	CD	Healthy
<b>Total Number of Live Trees: 2</b>		<b>Total Basal Area: 1.56</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 60-70% cover; and are comprised of nearly equal portions of box elder saplings, common buckthorn shrubs, dogberry (<i>Ribes cynosbati</i>) shrubs, honeysuckle shrubs, black cherry, raspberries, and multiflora rose.</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.



Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak Hickory Forest; 1-7
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Quercus macrocarpa</i>	bur oak	27.4	4.09	CD	Open crown; some dead braches on top and side
2	<i>Acer negundo</i>	box elder	5.4	0.16	O	Many side shoots
3	<i>Prunus serotina</i>	wild black cherry	5.9	0.19	O	Top dead; side braches alive
<b>Total Number of Live Trees: 3</b>		<b>Total Basal Area: 4.44</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 30-40% cover; comprised of mostly dogberry (<i>Ribes cynosbati</i>), box elder saplings and common buckthorn; occasionally <i>Rubus</i> and <i>Viburnum</i> species and black cherry were present.</p>						

<sup>1</sup>Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup>All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Honeysuckle Shrub Dominated; 2-1
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Prunus serotina</i>	wild black cherry	7.9	0.34	D	Main trunk dead; one small branch alive
<b>Total Number of Live Trees: 1</b>		<b>Total Basal Area: 0.34</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 90-95% cover; comprised of mostly honeysuckle and occasionally red elm, common buckthorn and staghorn sumac.</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Honeysuckle Shrub Dominated; 2-2
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>PICEA ABIES</i>	Norway spruce	9.3	0.47	CD/D	Healthy
2	<i>PICEA ABIES</i>	Norway spruce	6.4	0.22	CD/D	Healthy
3	<i>PICEA ABIES</i>	Norway spruce	7.5	0.31	CD/D	Healthy
4	<i>PICEA ABIES</i>	Norway spruce	12.1	0.80	CD/D	Healthy
5	<i>PICEA ABIES</i>	Norway spruce	10	0.55	CD/D	Healthy
6	<i>PICEA ABIES</i>	Norway spruce	12	0.79	CD/D	Healthy
7	<i>Prunus serotina</i>	wild black cherry	4.5	0.11	CD	Healthy
<b>Total Number of Live Trees: 7</b>		<b>Total Basal Area: 3.24</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 20-30% cover; comprised of equal portions black cherry, grey dogwood, honeysuckle, and <i>Rubus</i> species.</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Honeysuckle Shrub Dominated; 2-3
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Prunus serotina</i>	wild black cherry	5.3	0.15	D	Healthy
<b>Total Number of Live Trees: 1</b>		<b>Total Basal Area: 0.15</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 95-100% cover and are comprised of honeysuckle.</p>						

<sup>1</sup>Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup>All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Honeysuckle Shrub Dominated; 2-4
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>PICEA ABIES</i>	Norway spruce	6.3	0.22	D	Healthy
2	<i>PICEA ABIES</i>	Norway spruce	6.8	0.25	D	Healthy
3	<i>Prunus serotina</i>	wild black cherry	10.9	0.65	D	Healthy
4	<i>PICEA ABIES</i>	Norway spruce	8.3	0.38	D	Healthy
<b>Total Number of Live Trees: 4</b>		<b>Total Basal Area: 1.49</b>				

**SHRUBS:** Shrubs represent approximately 85-90% cover and are comprised of honeysuckle shrubs.

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Honeysuckle Shrub Dominated; 2-5
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Prunus serotina</i>	wild black cherry	6	0.20	D	Healthy
2	<i>Acer negundo</i>	box elder	4.7	0.12	CD	Healthy
3	<i>Rhus glabra</i>	smooth sumac	4.1	0.09	I	Healthy
<b>Total Number of Live Trees: 3</b>		<b>Total Basal Area: 0.41</b>				
<b>SHRUBS:</b> Shrubs represent approximately 70-80% cover; comprised of mostly honeysuckle and occasionally <i>Rubus</i> species, sumac and common buckthorn.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

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Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Honeysuckle Shrub Dominated; 2-6
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>ROBINIA PSEUDOACACIA</i>	black locust	10.1	0.56	CD	Healthy
2	<i>MORUS ALBA</i>	white mulberry	4.7	0.12	O	Healthy
3	<i>ROBINIA PSEUDOACACIA</i>	black locust	8.6	0.40	CD	Healthy
4	<i>ROBINIA PSEUDOACACIA</i>	black locust	5	0.14	O	Healthy
5	<i>Acer negundo</i>	box elder	4.9	0.13	O	Healthy
6	<i>Prunus serotina</i>	wild black cherry	13.1	0.94	D	Stump sprout with #7; some rot at base
7	<i>Prunus serotina</i>	wild black cherry	16.7	1.52	D	Stump sprout with #6; some rot at base
8	<i>Acer negundo</i>	box elder	4	0.09	O	Healthy
9	<i>ROBINIA PSEUDOACACIA</i>	black locust	7.5	0.31	CD	Healthy
10	<i>Prunus serotina</i>	wild black cherry	7.6	0.32	CD	Healthy
11	<i>Prunus serotina</i>	wild black cherry	9.6	0.50	CD	Healthy
12	<i>Prunus serotina</i>	wild black cherry	10.2	0.57	CD	Healthy
13	<i>Prunus serotina</i>	wild black cherry	5.9	0.19	CD	Healthy
14	<i>ROBINIA PSEUDOACACIA</i>	black locust	8	0.35	CD	Healthy
<b>Total Number of Live Trees: 14</b>		<b>Total Basal Area: 6.12</b>				

**SHRUBS:** Shrubs represent approximately 75-85% cover; comprised of mostly buckthorn and occasional occurrences of honeysuckle and box elder.

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

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Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak, Walnut, Black Locust Forest; 3-1
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Acer negundo</i>	box elder	8.4	0.38	O	Top dead; side braches alive
2	<i>ROBINIA PSEUDOACACIA</i>	black locust	12	0.79	D	Healthy
3	<i>ROBINIA PSEUDOACACIA</i>	black locust	11.4	0.71	D	Healthy
	<i>Ulmus americana</i>	American elm	14	~		Standing Dead
4	<i>Acer negundo</i>	box elder	11.1	0.67	CD	Healthy
<b>Total Number of Live Trees: 4</b>		<b>Total Basal Area: 2.55</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 75-85% cover; comprised of mostly honeysuckle and occasionally buckthorn, box elder and mulberry.</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.



Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak, Walnut, Black Locust Forest; 3-2
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Acer negundo</i>	box elder	14.6	1.16	O	Top dead
2	<i>Acer negundo</i>	box elder	11.4	0.71	I	Healthy
<b>Total Number of Live Trees: 2</b>		<b>Total Basal Area: 1.87</b>				
<b>SHRUBS:</b> Shrubs represent approximately 20-30% cover; comprised of honeysuckle and buckthorn.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

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Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak, Walnut, Black Locust Forest; 3-3
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	MORUS ALBA	white mulberry	5	0.14	O	Healthy
2	MORUS ALBA	white mulberry	7.5	0.31	I	Healthy
3	ROBINIA PSEUDOACACIA	black locust	7.6	0.32	CD	Dying; stump sprout with # 4
4	ROBINIA PSEUDOACACIA	black locust	8	0.35	CD	Stump sprout with # 3
5	MORUS ALBA	white mulberry	4.7	0.12	O	Healthy
6	MORUS ALBA	white mulberry	4.8	0.13	O	Some side branches broken
7	ROBINIA PSEUDOACACIA	black locust	11.5	0.72	CD	Healthy
8	MORUS ALBA	white mulberry	4	0.09	O	Dying
<b>Total Number of Live Trees: 8</b>		<b>Total Basal Area: 2.16</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 30-40% cover. Species include honeysuckle (15-25%); mulberry (10-15%); and black cherry (5-10%).</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

North McGaw Park Neighborhood Plan  
 Tree Inventory; NRC Project Number 008-0110-01

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak, Walnut, Black Locust Forest; 3-4
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Juglans cinerea</i>	butternut	13.1	0.94	D	Dying
2	<i>Juglans cinerea</i>	butternut	16.6	1.50	D	Dying
3	<i>Juglans cinerea</i>	butternut	10.5	0.60	D	Dying
4	<i>Prunus serotina</i>	wild black cherry	8.3	0.38	CD	Bore holes present
5	<i>Quercus macrocarpa</i>	bur oak	5.2	0.15	I	Healthy
6	<i>Quercus rubra</i>	northern red oak	11.9	0.77	D	Healthy
7	<i>Prunus serotina</i>	wild black cherry	15.6	1.33	D	Dying; broken top branches
8	<i>Juglans cinerea</i>	butternut	15.7	1.34	D	some top branches dead
<b>Total Number of Live Trees: 8</b>		<b>Total Basal Area: 7.01</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 40-50% cover; comprised of mostly honeysuckle and occasionally shagbark hickory seedlings and dogberry (<i>Ribes cynosbati</i>) shrubs.</p>						

<sup>1</sup>Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup>All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak, Walnut, Black Locust Forest; 3-5
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>ROBINIA PSEUDOACACIA</i>	black locust	14.6	1.16	D	Healthy
2	<i>ROBINIA PSEUDOACACIA</i>	black locust	10.5	0.60	D	Healthy
3	<i>Acer negundo</i>	box elder	6.5	0.23	O	Healthy
4	<i>ROBINIA PSEUDOACACIA</i>	black locust	12	0.79	D	Healthy
<b>Total Number of Live Trees: 4</b>		<b>Total Basal Area: 2.78</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 50-60% cover; comprised of mostly honeysuckle and occasionally black cherry and mulberry seedlings.</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Oak, Walnut, Black Locust Forest; 3-6
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Prunus serotina</i>	wild black cherry	5.5	0.16	O	Healthy
2	ROBINIA PSEUDOACACIA	black locust	8.6	0.40	CD	Healthy
	ROBINIA PSEUDOACACIA	black locust	10.7	~		Dead
	<i>Prunus serotina</i>	wild black cherry	4.5	~		Dead
3	ROBINIA PSEUDOACACIA	black locust	15	1.23	CD	Rot at base
<b>Total Number of Live Trees: 3</b>		<b>Total Basal Area: 1.8</b>				
<b>SHRUBS:</b> Shrubs represent approximately 30-40% cover; comprised of mostly honeysuckle and common buckthorn and occasionally black cherry and mulberry seedlings.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

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Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Box Elder Woodland; 4-1
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Acer negundo</i>	box elder	10.1	0.56	O	Significant lean
2	<i>Acer negundo</i>	box elder	11.3	0.70	O	leaning
3	<i>Acer negundo</i>	box elder	11.2	0.68	D	
4	<i>Acer negundo</i>	box elder	8.2	0.37	CD	cracked limb
5	<i>Acer negundo</i>	box elder	11.4	0.71	D	
6	<i>Acer negundo</i>	box elder	11.6	0.73	D	limb broken; mostly dead; split
7	<i>Acer negundo</i>	box elder	6	0.20	O	leaning; almost dead
8	<i>Acer negundo</i>	box elder	6.9	0.26	O	
9	<i>Acer negundo</i>	box elder	10.1	0.56	D	top broken
10	<i>Acer negundo</i>	box elder	6.6	0.24	CD	healthy
11	<i>Acer negundo</i>	box elder	9.1	0.45	CD	bark split
12	<i>Acer negundo</i>	box elder	8.3	0.38	CD	healthy
13	<i>Acer negundo</i>	box elder	7.2	0.28	O	healthy
14	<i>Acer negundo</i>	box elder	12.6	0.87	CD	
15	<i>Acer negundo</i>	box elder	9	0.44	CD	leaning
16	<i>Acer negundo</i>	box elder	8.6	0.40	D	
17	<i>Acer negundo</i>	box elder	10.7	0.62	D	

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Box Elder Woodland; 4-1
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
18	<i>Acer negundo</i>	box elder	9	0.44	I	top broken
19	<i>Acer negundo</i>	box elder	10.5	0.60	CD	
20	<i>Acer negundo</i>	box elder	10.1	0.56	CD	
21	<i>Acer negundo</i>	box elder	9.7	0.51	CD	
<b>Total Number of Live Trees: 21</b>		<b>Total Basal Area: 10.55</b>				

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Box Elder Woodland; 6-1
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>ROBINIA PSEUDOACACIA</i>	black locust	7.5	0.31	CD	Dead Lower Branches
2	<i>ROBINIA PSEUDOACACIA</i>	black locust	4.5	0.11	O	Fallen trees leaning on fork
3	<i>Ulmus rubra</i>	slippery elm	4.4	0.11	O	Healthy
4	<i>ROBINIA PSEUDOACACIA</i>	black locust	6.3	0.22	CD	Healthy
5	<i>Acer negundo</i>	box elder	13.7	1.02	D	Lots of side shoots
6	<i>ROBINIA PSEUDOACACIA</i>	black locust	6.2	0.21	CD	Healthy
<b>Total Number of Live Trees: 6</b>		<b>Total Basal Area: 1.97</b>				

**SHRUBS:** Shrubs represent approximately 0-10% cover; comprised of mostly honeysuckle (*LONICERA X BELLA*) and occasionally green ash seedlings.

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.



Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Box Elder Woodland; 6-2
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Ulmus americana</i>	American elm	4.8	0.13	O	Healthy
2	<i>Ulmus americana</i>	American elm	4.9	0.13	O	Healthy
3	<i>Acer negundo</i>	box elder	20.1	2.20	D	Stump sprout with # 4; lots of side shoots
4	<i>Acer negundo</i>	box elder	13.2	0.95	D	Stump sprout with # 3; lots of side shoots
<b>Total Number of Live Trees: 4</b>		<b>Total Basal Area: 3.41</b>				
<b>SHRUBS:</b> Shrubs represent approximately 0-5% cover; comprised of mostly 1-2" mulberry (MORUS ALBA) and occasionally honeysuckle (LONICERA X BELLA) shrubs.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Box Elder Woodland; 6-3
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Acer negundo</i>	box elder	11.2	0.68	D	Healthy
2	<i>Acer negundo</i>	box elder	11.6	0.73	D	Healthy
3	<i>Acer negundo</i>	box elder	8.6	0.40	D	Healthy
4	<i>Acer negundo</i>	box elder	10.7	0.62	D	Healthy
5	<i>Acer negundo</i>	box elder	5.9	0.19	O	Leaning; fence growing through tree
6	<i>Acer negundo</i>	box elder	9.9	0.53	D	Healthy
7	<i>Acer negundo</i>	box elder	8.5	0.39	D	Healthy
<b>Total Number of Live Trees: 7</b>		<b>Total Basal Area: 3.56</b>				
<p><b>SHRUBS:</b> Shrubs represent approximately 70-80% cover; comprised of mostly mulberry (<i>MORUS ALBA</i>) and occasionally hackberry (<i>Celtis occidentalis</i>) seedlings.</p>						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Remnant Oak Savannah; 7-1
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Quercus alba</i>	white oak	45	11.04	D	minor crown die-back and rot at base; crown approximately 60-70% alive
<b>Total Number of Live Trees: 1</b>		<b>Total Basal Area: 11.04</b>				
<b>SHRUBS:</b> Shrubs represent approximately 5-15% cover; comprised of mostly common buckthorn and occasionally multiflora rose.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Remnant Oak Savannah; 7-2
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>ROBINIA PSEUDOACACIA</i>	black locust	5	0.14	CD	Healthy
2	<i>ROBINIA PSEUDOACACIA</i>	black locust	5	0.14	CD	Healthy
3	<i>ROBINIA PSEUDOACACIA</i>	black locust	4.5	0.11	CD	Healthy
4	<i>ROBINIA PSEUDOACACIA</i>	black locust	4	0.09	CD	Healthy
5	<i>ROBINIA PSEUDOACACIA</i>	black locust	5.5	0.16	CD	Healthy
6	<i>ROBINIA PSEUDOACACIA</i>	black locust	4	0.09	CD	Healthy
<b>Total Number of Live Trees: 6</b>		<b>Total Basal Area: 0.72</b>				
<b>SHRUBS:</b> Shrubs represent approximately 85-95% cover; comprised of mostly black locust seedlings and multiflora rose in addition to occasionally occurrences of common buckthorn.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

Investigators: Melissa Curran & Dave Giblin						Forest Type and Plot Number: Remnant Oak Savannah; 7-3
Tree #	Species Name <sup>2</sup>	Common Name	Dbh	Basal Area	Crown Class <sup>1</sup>	Notes
1	<i>Ulmus americana</i>	American elm	15.5	1.31	D	Healthy
2	<i>MORUS ALBA</i>	white mulberry	11	0.66	D	Many lower braches dead
3	<i>Quercus rubra</i>	northern red oak	26.5	3.83	D	Healthy
4	<i>Quercus macrocarpa</i>	bur oak	17	1.58	D	One large side brach dead
<b>Total Number of Live Trees: 4</b>		<b>Total Basal Area: 7.38</b>				
<b>SHRUBS:</b> Shrubs represent approximately 5-15% cover; comprised of mostly common buckthorn and occasionally multiflora rose.						

<sup>1</sup> Dominant (D): Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand, and with crowns well developed but possibly somewhat crowded on the sides. Codominant (CD): Trees with crowns forming the general level of the crown cover and receive full light from above but comparatively little from the sides; usually with medium-sized crowns more of less crowded on the sides. Intermediate (I): Trees shorter than those in the two preceding classes but with crowns extending into the crown cover formed by codominant and dominant trees; receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides. Overtopped (O): Trees with crowns entirely below the general level of the crown cover; receiving no direct light either from above or from the sides.

<sup>2</sup> All capital letters denotes a non-native species.

North McGaw Park Neighborhood Plan  
Vegetation Survey Community Herbaceous Species Lists

Table B-1. Community 1: Oak Hickory Forest

Species Name	Common Name	Frequency	Average % cover
<i>ALLIARIA PETIOLATA</i>	garlic mustard	79%	40.00
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	71%	8.39
<i>Geum canadense</i>	white avens	68%	15.79
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	50%	7.68
<i>Ribes cynosbati</i>	dogberry	46%	9.11
<i>Parthenocissus quinquefolia</i>	Virginia creeper	43%	5.89
<i>Rubus occidentalis</i>	black raspberry	25%	4.29
<i>Viola spp</i>	Violet	18%	2.36
<i>RHAMNUS CATHARTICA</i>	common buckthorn	14%	1.07
<i>Podophyllum peltatum</i>	may-apple	11%	1.96
<i>Prunus serotina</i>	wild black cherry	11%	0.61
<i>Vitis riparia</i>	river bank grape	11%	0.25
Bare Ground/Un-vegetated		11%	8.04
<i>Fragaria virginiana</i>	wild strawberry	4%	3.04
<i>Acer negundo</i>	box elder	4%	1.07
<i>LONICERA X BELLA</i>	Bell's honeysuckle	4%	0.71
<i>Viburnum opulus</i>	high-bush cranberry	4%	0.36
<i>Polygonum virginianum</i>	jumpseed	4%	0.18
<i>ROSA MULTIFLORA</i>	multiflora rose	4%	0.18
<i>Ulmus americana</i>	American elm	4%	0.04

Table B-2. Community 2: Honeysuckle Shrub Dominated

Species Name	Common Name	Frequency	Average % cover
Bare Ground/Un-vegetated		89%	72.86
<i>LONICERA X BELLA</i>	Bell's honeysuckle	68%	10.71
<i>RHAMNUS CATHARTICA</i>	common buckthorn	54%	4.71
<i>Parthenocissus quinquefolia</i>	Virginia creeper	36%	2.43
<i>TARAXACUM OFFICINALE</i>	common dandelion	36%	1.25
<i>Geum canadense</i>	white avens	21%	2.00
<i>PASTINACA SATIVA</i>	wild parsnip	18%	1.11
<i>Vitis riparia</i>	river bank grape	18%	0.75
<i>POA PRATENSIS</i>	Kentucky bluegrass	14%	1.79
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	11%	3.93
<i>Cornus racemosa</i>	gray dogwood	11%	0.71
<i>Polygonum virginianum</i>	jumpseed	11%	0.93
<i>Prunus serotina</i>	wild black cherry	11%	0.39
<i>Rubus occidentalis</i>	black raspberry	11%	1.07
<i>Achillea millefolium</i>	common yarrow	4%	0.54
<i>Athyrium filix-femina</i>	common lady fern	4%	0.18
<i>ARCTIUM MINUS</i>	common burdock	4%	1.07
<i>DAUCUS CAROTA</i>	Queen Anne's-lace	4%	0.04
<i>HIERACIUM AURANTIACUM</i>	devil's-paintbrush	4%	0.71
<i>PHALARIS ARUNDINACEA</i>	reed canary grass	4%	0.18
<i>PLANTAGO MAJOR</i>	plantain	4%	0.18
<i>ROSA MULTIFLORA</i>	multiflora rose	4%	0.18
<i>Solidago canadensis</i>	common goldenrod	4%	1.07
<i>Ulmus americana</i>	American elm	4%	0.04

North McGaw Park Neighborhood Plan  
Vegetation Survey Community Herbaceous Species Lists

Table B-3. Community 3: Oak, Walnut, Black Locust Forest

Species Name	Common Name	Frequency	Average % cover
<i>ALLIARIA PETIOLATA</i>	garlic mustard	83%	48.96
<i>Geum canadense</i>	white avens	83%	25.63
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	54%	5.04
Bare Ground/Un-vegetated		38%	20.63
<i>RHAMNUS CATHARTICA</i>	common buckthorn	21%	1.29
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	17%	3.13
<i>LONICERA X BELLA</i>	Bell's honeysuckle	17%	2.29
<i>Prunus serotina</i>	wild black cherry	13%	1.50
<i>Acer negundo</i>	box elder	8%	0.42
<i>Polygonum virginianum</i>	jumpseed	8%	1.67
<i>Ribes cynosbati</i>	dogberry	8%	0.25
<i>Galium triflorum</i>	sweet-scented bedstraw	4%	0.21
<i>Hackelia virginiana</i>	beggar's-lice	4%	1.25
<i>Parthenocissus quinquefolia</i>	Virginia creeper	4%	0.21
<i>Polygonatum biflorum</i>	Solomon's-seal	4%	1.88
<i>ROSA MULTIFLORA</i>	multiflora rose	4%	0.04
<i>Vitis riparia</i>	river bank grape	4%	0.42

Table B-4. Community 4: Box Elder Woodland

Species Name	Common Name	Frequency	Average % cover
<i>ALLIARIA PETIOLATA</i>	garlic mustard	100%	51.25
<i>Geum canadense</i>	white avens	75%	28.75
<i>Ambrosia artemisiifolia</i>	common ragweed	25%	1.25
<i>ARCTIUM MINUS</i>	common burdock	25%	3.75
<i>LONICERA X BELLA</i>	Bell's honeysuckle	25%	8.75
<i>Parthenocissus quinquefolia</i>	Virginia creeper	25%	5
<i>Polygonum virginianum</i>	jumpseed	25%	1.25
<i>Prunus serotina</i>	wild black cherry	25%	1.25
<i>Ribes cynosbati</i>	dogberry	25%	5
<i>Rubus allegheniensis</i>	Allegheny blackberry	25%	6.25
<i>TARAXACUM OFFICINALE</i>	common dandelion	25%	1.25
Bare Ground/Un-vegetated		25%	13.75

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Vegetation Survey Community Herbaceous Species Lists

Table B-5. Community 5: Remnant Oak Savanna

Species Name	Common Name	Frequency	Average % cover
<i>POA PRATENSIS</i>	Kentucky bluegrass	100%	56.25
<i>DAUCUS CAROTA</i>	Queen Anne's-lace	92%	16.25
<i>BROMUS INERMIS</i>	smooth brome	83%	34.17
<i>GLECHOMA HEDERACEA</i>	creeping-Charlie	67%	9.25
<i>Vitis riparia</i>	river bank grape	50%	3.17
<i>Achillea millefolium</i>	common yarrow	33%	1.42
<i>TARAXACUM OFFICINALE</i>	common dandelion	25%	0.58
<i>ECHINOCHLOA CRUSGALLI</i>	barnyard grass	17%	1.25
<i>POTENTILLA RECTA</i>	sulphur five-fingers	17%	0.50
<i>Rhus hirta</i>	velvet sumac	17%	1.67
<i>RHAMNUS CATHARTICA</i>	common buckthorn	8%	0.83
<i>ROSA MULTIFLORA</i>	multiflora rose	8%	0.83
<i>RUMEX ACETOSELLA</i>	common sheep sorrel	8%	0.08

Table B-6. Community 6: Box Elder Woodland

Species Name	Common Name	Frequency	Average % cover
<i>ALLIARIA PETIOLATA</i>	garlic mustard	100%	48.75
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	50%	4.58
<i>Geum aleppicum</i>	yellow avens	50%	26.25
<i>ARCTIUM MINUS</i>	common burdock	25%	3.42
<i>Geum canadense</i>	white avens	25%	2.92
<i>HESPERIS MATRONALIS</i>	dame's rocket	17%	0.83
<i>LONICERA X BELLA</i>	Bell's honeysuckle	17%	2.08
<i>Celtis occidentalis</i>	northern hackberry	8%	0.42
<i>Fraxinus pennsylvanica</i>	green ash	8%	0.83
<i>PHALARIS ARUNDINACEA</i>	reed canary grass	8%	6.67
<i>POA PRATENSIS</i>	Kentucky bluegrass	8%	1.25
<i>RHAMNUS CATHARTICA</i>	common buckthorn	8%	0.42
<i>Rubus allegheniensis</i>	Allegheny blackberry	8%	0.42
<i>TARAXACUM OFFICINALE</i>	common dandelion	8%	0.08
<i>Urtica dioica</i>	stinging nettle	8%	0.83
<i>Vitis riparia</i>	river bank grape	8%	0.42
Bare Ground/Un-vegetated		8%	3.33



North McGaw Park Neighborhood Plan  
Vegetation Survey Community Herbaceous Species Lists

Table B-7. Community 7: Remnant Oak Savanna

<b>Species Name</b>	<b>Common Name</b>	<b>Frequency</b>	<b>Average % cover</b>
<i>ROSA MULTIFLORA</i>	multiflora rose	67%	12.50
<i>TARAXACUM OFFICINALE</i>	common dandelion	58%	7.08
<i>POA PRATENSIS</i>	Kentucky bluegrass	50%	27.08
<i>Circaea lutetiana</i>	broad-leaf enchanter's-nightshade	42%	6.67
<i>Rubus occidentalis</i>	black raspberry	42%	5.83
<i>ALLIARIA PETIOLATA</i>	garlic mustard	33%	13.75
<i>Geum canadense</i>	white avens	33%	14.17
<i>RHAMNUS CATHARTICA</i>	common buckthorn	33%	2.08
<i>Viola spp</i>	Violet	25%	2.08
<i>Ambrosia artemisiifolia</i>	common ragweed	17%	0.83
<i>BROMUS INERMIS</i>	smooth brome	17%	0.83
<i>DAUCUS CAROTA</i>	Queen Anne's-lace	17%	1.25
<i>Erigeron annuus</i>	annual fleabane	17%	0.83
<i>Prunus serotina</i>	wild black cherry	17%	0.83
<i>Quercus macrocarpa</i>	bur oak	17%	1.25
<i>Ulmus americana</i>	American elm	17%	0.83
<i>Asclepias syriaca</i>	common milkweed	8%	1.25
<i>Carya ovata</i>	shagbark hickory	8%	1.25
<i>GLECHOMA HEDERACEA</i>	creeping-Charlie	8%	3.75
<i>Juncus tenuis</i>	path rush	8%	0.42
<i>LONICERA X BELLA</i>	Bell's honeysuckle	8%	1.67
<i>Oxalis stricta</i>	common yellow oxalis	8%	0.83
<i>PHLEUM PRATENSE</i>	timothy	8%	2.92
<i>PLANTAGO MAJOR</i>	plantain	8%	0.42
<i>Quercus rubra</i>	northern red oak	8%	0.83
<i>Ribes cynosbati</i>	dogberry	8%	1.25
<i>SOLANUM DULCAMARA</i>	bittersweet nightshade	8%	0.42
<i>Solidago canadensis</i>	common goldenrod	8%	2.08
<i>TRIFOLIUM PRATENSE</i>	red clover	8%	1.25

North McGaw Park Neighborhood Plan  
 Table B-8. Heritage and Specimen Trees Data

Tree ID	DBH	Common Name	Health Notes
<b>Heritage Trees</b>			
HT-01	41.5	bur oak	white fungus on lower braches
HT-02	45	white oak	
HT-03	39.3	white oak	
HT-04	40	white oak	
HT-05	41.8	white oak	
HT-06	41.4	white oak	
HT-07	38.3	white oak	little rot at base
HT-08	47.5	white oak	
HT-09	39	bur oak	
HT-10	45	white oak	some top die back and rot at base; 60-70% of the crown still alive
HT-11	42	white oak	healthy; some limbs trimmed because of power line
HT-12	39	white oak	healthy
HT-13	38	bur oak	minor lower branches dead
HT-14	39	white oak	healthy
HT-15	46	bur oak	already a heritage tree; lower limbs sawed off
HT-16	45	bur oak	healthy
HT-17	39	bur oak	some lower branches dead
HT-18	42	bur oak	
HT-19	39	bur oak	tree stand damage
HT-20	46	bur oak	some health issues
HT-21	38	bur oak	
HT-22	67	bur oak	large side shoot fallen and dead; possible rot at base
HT-23	51	bur oak	moderate defects
HT-24	47	bur oak	moderate defects
HT-25	43	white oak	minor defects
HT-26	39	bur oak	moderate defects
HT-27	37	bur oak	minor defects
HT-28	41	bur oak	healthy
HT-29	40	bur oak	healthy
HT-30	45	sugar maple	moderate defects
HT-31	43	sugar maple	moderate defects
HT-32	40	bur oak	minor defects
<b>Specimen Trees</b>			
ST-01	31.2	bur oak	bark peeling at base
ST-02	31.1	bur oak	bark peeling approximately 10 ft up tree
ST-03	36.5	bur oak	healthy
ST-04	24	bur oak	
ST-05	25	bur oak	
ST-06	21.5	bur oak	
ST-07	26	black oak	
ST-08	29.5	black oak	some lower braches without leaves
ST-09	20.5	bur oak	
ST-10	24.8	bur oak	
ST-11	24.5	bur oak	
ST-12	23.5	bur oak	leaning top
ST-13	30	bur oak	
ST-14	26.5	bur oak	
ST-15	27	bur oak	bark peeling at base
ST-16	30.2	bur oak	
ST-17	32.5	bur oak	
ST-18	27.5	bur oak	
ST-19	20.8	bur oak	bark peeling at base
ST-20	30	bur oak	
ST-21	25.5	bur oak	
ST-22	25	bur oak	bark peeling at base
ST-23	20	bur oak	leaning

North McGaw Park Neighborhood Plan  
 Table B-8. Heritage and Specimen Trees Data

Tree ID	DBH	Common Name	Health Notes
ST-24	26.5	bur oak	bark peeling at base
ST-25	25.6	black oak	
ST-26	22.3	black oak	
ST-27	24.7	black oak	lower braches without leaves
ST-28	32.5	bur oak	
ST-29	36	white oak	
ST-30	37	bur oak	
ST-31	33	white oak	
ST-32	34	bur oak	
ST-33	34	bur oak	23 dbh bur oak adjacent to this tree
ST-34	37.1	white oak	
ST-35	31.3	white oak	
ST-36	37	bur oak	33 dbh bur oak adjacent to this tree
ST-37	36.5	bur oak	
ST-38	32.5	bur oak	
ST-39	35	bur oak	
ST-40	27	bur oak	
ST-41	22	bur oak	
ST-42	30	white oak	
ST-43	21	shagbark hickory	
ST-44	31	bur oak	
ST-45	27	bur oak	
ST-46	36	bur oak	
ST-47	23	bur oak	
ST-48	29	white oak	
ST-49	23	white oak	
ST-50	23	bur oak	
ST-51	25	bur oak	
ST-52	24	bur oak	
ST-53	24	white oak	
ST-54	29	white oak	
ST-55	38	bur oak	poor health
ST-56	22	bur oak	

Table 1. Benthic invertebrate sampling results, including FBI and Shannon Diversity statistics

A.) Number of individuals caught per family (or appropriate taxonomic rank).  
Abbreviations: MC = Murphy Creek; SC1 = Swan Creek/Hartung; SC2 = Swan Creek/Lalor Road

<u>Family (or taxon)</u>	MCa	MCb	SC1a	SC1b	SC2a	SC2b
Sphaeriidae	0	1	0	0	0	0
Nematoda	2	3	0	2	0	0
Hirudinea	1	0	0	0	0	0
Oligochaeta	1	0	0	1	0	0
Gammaridae	14	28	57	163	39	150
Asellidae	30	4	8	14	0	0
Baetidae	10	5	43	12	9	1
Hydropsychidae	0	0	3	2	2	0
Chironomidae	3	0	0	1	1	0
Blood Red Chironomid	5	2	0	0	0	3
Simuliidae	3	0	108	35	2	0
Tipulidae	12	5	1	0	0	0
Tabanidae	0	0	0	1	0	0
Elmidae	0	0	0	13	3	5
<b>TOTALS</b>	<b>82</b>	<b>48</b>	<b>220</b>	<b>244</b>	<b>56</b>	<b>159</b>

B.) FBI and Shannon Diversity Statistics. For each statistic, the average of both samples taken at the site is given first, followed by the scores of each sample; e.g., AVERAGE (Sample a, Sample b)

	Murphy Creek	Swan Creek 1	Swan Creek 2
FBI	4.93 (5.80, 4.06)	4.82 (5.12, 4.51)	4.09 (4.11, 4.08)
FBI Ranking (Based on average)	Good	Good	Very Good
Shannon Diversity	1.62 (1.86, 1.38)	1.19 (1.22, 1.16)	0.40 (0.53, 0.27)

Table 2. Electrofishing survey results, including CPUE, IBI, and Shannon Diversity statistics

A.) Species, numbers caught, and total survey time

	Murphy's Creek	Swan Creek 1	Swan Creek 2
<u>Species</u>			
Black Bullhead	1	0	0
Bluegill	0	1	5
Bluntnose Minnow	22	0	9
Brook Stickleback	0	110	4
Central Mudminnow	1	0	0
Fathead Minnow	1	13	9
Johnny Darter	6	0	8
Pumpkinseed	0	24	3
Warmouth	0	5	0
TOTALS	31	153	38
Survey Time (min)	17.26	18.9	21.41

B.) Catches per Unit Effort (CPUE; number of individuals captured/minute of shocking time)

	Murphy's Creek	Swan Creek 1	Swan Creek 2
<u>Species</u>			
Black Bullhead	0.06	0	0
Bluegill	0	0.06	0.23
Bluntnose Minnow	1.27	0	0.42
Brook Stickleback	0	5.82	0.19
Central Mudminnow	0.06	0	0
Fathead Minnow	0.06	0.69	0.42
Johnny Darter	0.35	0	0.37
Pumpkinseed	0	1.27	0.14
Warmouth	0	0.26	0
TOTALS	1.80	8.09	1.77

C.) IBI and Shannon Diversity Statistics

	Murphy's Creek	Swan Creek 1	Swan Creek 2
Coldwater IBI	0 = Very Poor	20 = Poor	0 = Very Poor
Warmwater IBI	0 = Very Poor	35 = Fair	0 = Very Poor
Shannon Diversity	0.89	0.88	1.71